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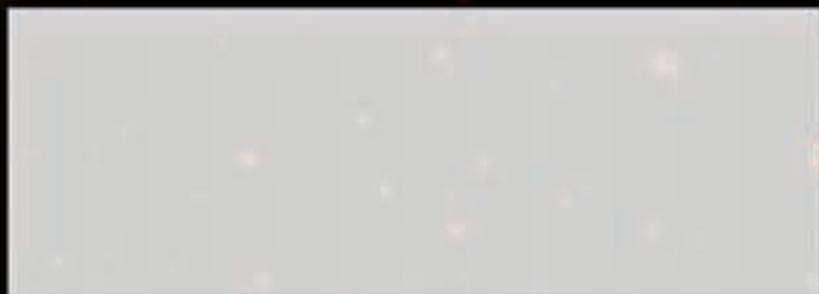
EXPLORER

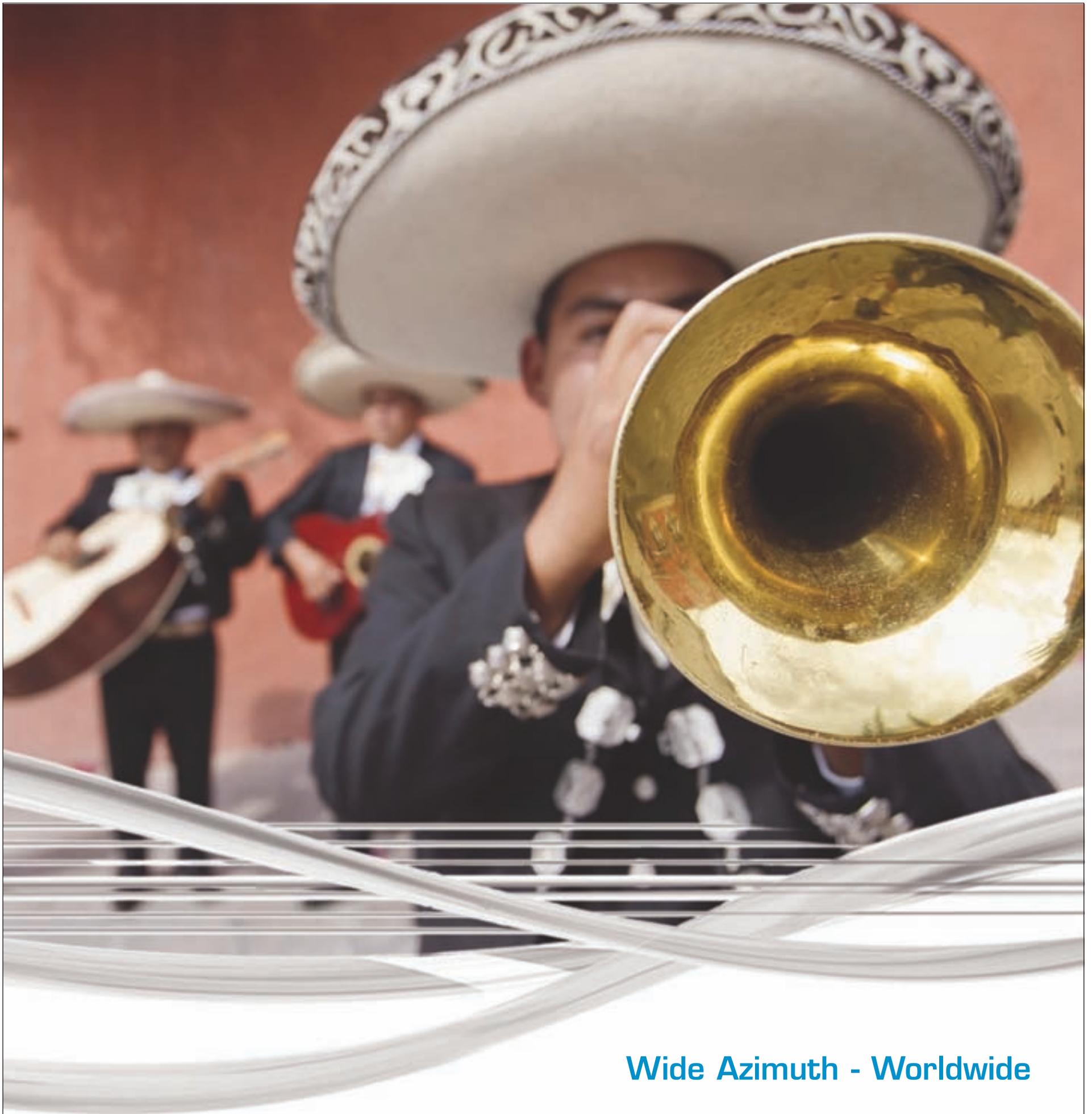
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On the cover: Energy is the name of game, and the entire planet seems ready to be part of the action. This month's EXPLORER takes a look at several areas of interest, as represented on the cover by scenes (clockwise from top) from Ghana (two), Egypt, Texas and Greenland. Stories on all these areas – and more – are inside. Cover concept by Rusty Johnson; photos courtesy of Kosmos Energy, Apache Corp., Brayton Operating Corp. and Tony Tankard.



Next stop, Cape Town. AAPG's 2008 International Conference and Exhibition (ICE) will be held Oct. 26-29 at the Cape Town International Convention Centre – the Association's first ever ICE in South Africa. The meeting's theme is "African Energy, Global Impact," and it will feature 70-plus technical sessions exploring the latest in exploration, geology, geosciences and industry trends. The Geological Society of South Africa will serve as conference co-hosts. For more information see page 30, or go online to www.aapg.org/capetown/index.cfm.

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PRESIDENT'S column

Communications Gap: An Issue for the Ages

By SCOTT W. TINKER

For the past few months we have been discussing bridge building, with particular focus on energy/economy and energy/environment bridges.

Regardless of the bridge – science/policy, industry/government, academe/industry – communication is fundamental. It is easy to say, but hard to do; your "clear" may be their "mud."

Communication between technical disciplines, generations or geopolitical regions is a great challenge, incorporating such differences as education, genetic coding, societal indoctrination, language and generational perspective.

* * *

How often has each of us witnessed, or been party to, a communication that breaks down owing to lack of cross-generational perspective?

Let us examine the simple phrase, "Let's keep in touch."

With obvious generalization, to a person in her 60s this may mean a social visit, a telephone call on her landline or a letter by snail mail. To someone in his 40s it may mean a call on his cell phone or an e-mail. To someone in her 20s it could mean an online "chat," Facebook hook up or instant message.

The more "seasoned" among our



Tinker

ranks bemoan the lack of personal contact that the wired world has brought us; today's "noobs" (I learned that word from my 18-year-old son; I think it means something like "newbie" or "rookie") don't necessarily concur. For example,

before they met in person, my son knew his roommate better via Facebook than I did after several weeks of rooming with mine 30 years ago.

If "let's keep in touch" poses a generational challenge, consider nuanced concepts such as work ethic, professionalism and commitment, all which have the potential, when debated across generations, to create enough conversational energy (sparks!) to power greater Beijing (or at least Flower Mound, Texas).

To a 20-year-old student who has grown up in an electronic age with 24/7 global connectedness, "work ethic" may mean something very different than it does to someone still getting used to the concept of a wireless phone.

Perceptions of generational difference

See **President**, page 6

Fall Conference Rescheduled in Houston

AAPG's Fall Education Conference, canceled in September by Hurricane Ike's assault on the Texas coast, has been rescheduled for Dec. 8-12 in Houston.

The popular conference offers five days of three concurrent sessions around the theme of structural geology – participants can "mix and match" courses according to their needs –

covering such topics as fractured reservoirs, reservoir characteristics and geomechanics, pore pressure prediction, fault seal analysis, seismic amplitude interpretation, thrust systems and salt tectonics.

Registration and complete information can be found online at <http://www.aapg.org/education/fec.cfm>.

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COME TO DRY GROUND FOR A CHANGE

The onshore sedimentary basins of Brazil with oil and gas potential cover a huge area of the country – more than 4.5 million km².

A continental scale extension of Paleozoic and Proterozoic rocks still remains vastly underexplored, although presenting proven and active Petroleum Systems.

On the other extreme there are the mature and prolific Cretaceous rift basins with an attractive remnant of prospects still to be unveiled.

The next coming ANP BID ROUND 10 will be composed by sectors of the onshore realm.

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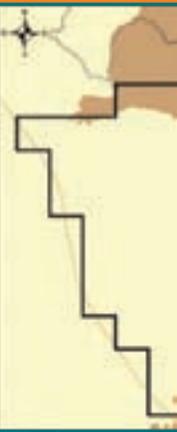
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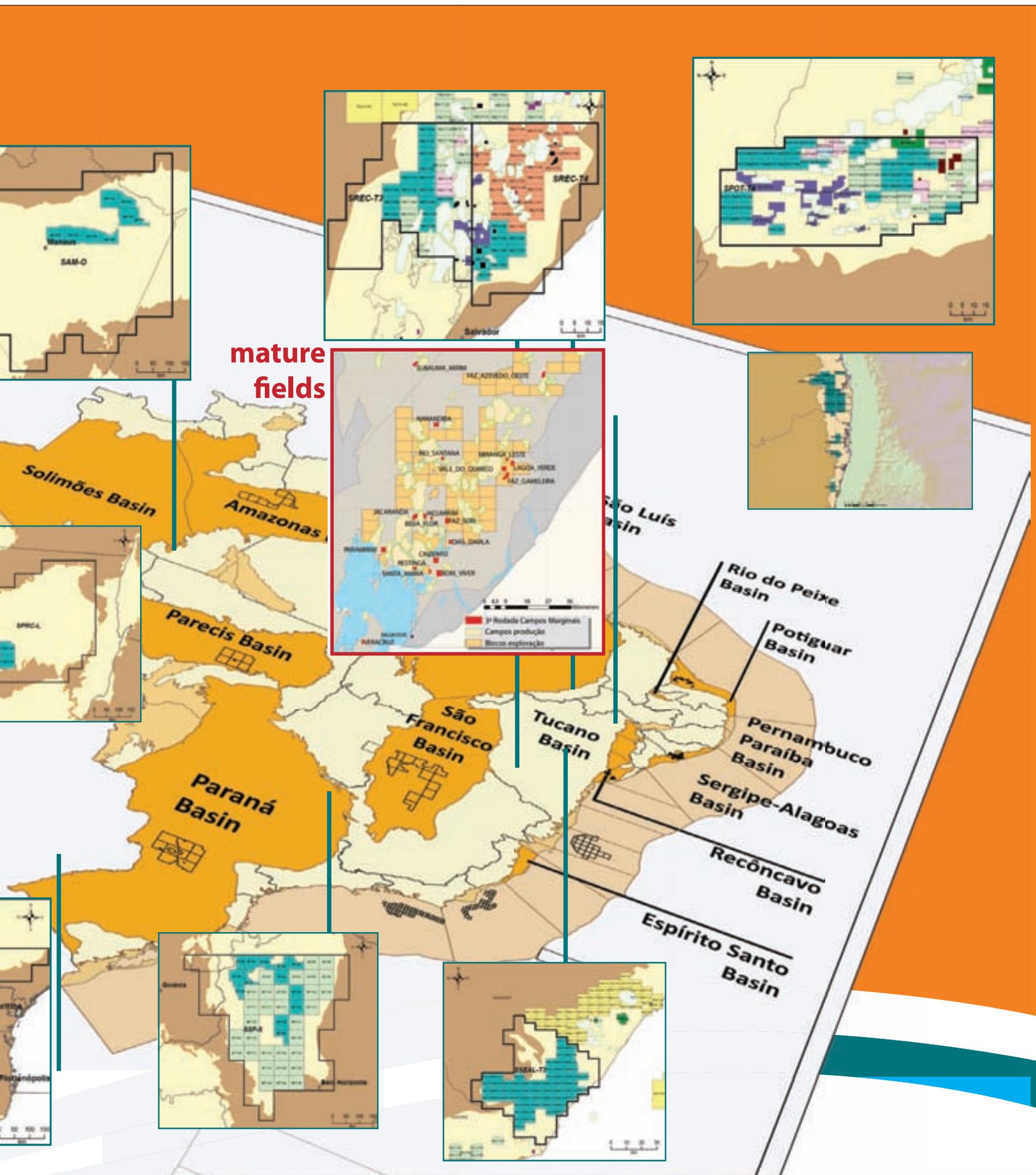
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Candidate Bios Online

Biographies and individual information for AAPG officer candidates for the 2009-10 term is available online at www.aapg.org.

The information also will be inserted in an upcoming EXPLORER.

The president-elect winner will serve as AAPG president in 2010-11. The terms for both vice president-Regions and secretary are two years.

Ballots will be mailed in spring 2009. The slate is:

President-Elect

☐ Donald D. Clarke, geological

consultant, Lakewood, Calif.

☐ David G. Rensink, Apache Corp., Houston.

Vice President-Regions

☐ Adekunle A. Adesida, Shell Petroleum Development, Nigeria.

☐ Alfredo E. Guzman, consultant, Veracruz, Mexico.

Secretary

☐ William S. Houston, Samson, Denver.

☐ Peter MacKenzie, MacKenzie Land & Exploration, Worthington, Ohio. ☐

President

from page 3

have been around as long as there have been generations. Arguably, a young professional is just as committed and hard working relative to his world as a seasoned veteran is relative to hers. To believe otherwise would most certainly inhibit, if not prohibit, the building of a generational bridge.

It is a given that the future of AAPG and other professional associations and societies rests in the hands of our young members. Therefore, fundamental is the willingness of the more seasoned to reach out, engage and listen to and offer, where appropriate, wise counsel. Also fundamental is the willingness of

the less experienced to listen, digest and share, with some measure of respect for the experience of those who have gone before, perspectives on the ways of the modern world.

If done well – and if you will permit me an age-bias aside, perhaps best done *face-to-face* – then each can take some measure of pride and ownership as inevitable change takes hold and carries us forward.

* * *

The individual challenge of cross-generational communication emerges on a much broader geopolitical scale: the variation in age demographics by country and region.

In Canada, China, much of Europe, Japan, Russia, the United States and other countries heavily impacted by World War II, age demographics are commonly bimodal, with a mode around 50 years of age and an “echo” generation around 20-25 years of age. A great challenge in many of these nations is supporting an aging yet reasonably healthy population who wish to retire, while at the same time finding ways of maintaining growth and remaining relevant in the world.

By contrast Brazil, India, Mexico, Saudi Arabia and others have a single mode around 15-20 years of age. Their great challenges include managing growth and resource consumption and employing and leveraging the potential of a young, able work force.

If jobs are not available and the employment need is not met, unemployed youth find other ways to be heard – ways that are often not productive, and at times even destructive.

We live in an interconnected world. Developed nations with a mature populous talking “down” to developing nations dominated by youth works no better than seasoned veterans lecturing to inexperienced young professionals.

Acceptance of the inherent differences that the wisdom of time and vigor of youth provide – across generations and between regions with significantly different age demographics – is vital to the health of our Association, of our industry and of a world that relies on energy for growth and prosperity.

* * *

Building a global generational bridge will not be easy. Significant challenges rarely are.

I usually start with something I can accomplish:

Pick one person who is not in your generation – preferably not in your home country – and commit the year to communicating with that person.

Mentoring is not age dependent; it works bottom up and top down.

If you are a seasoned veteran, share your experience and wisdom – and try to ask more questions than you answer.

If you are a young professional, share your vision of the world and where you see it going – and try to listen more than you “text”!

I’ll bet you find the experience gratifying.

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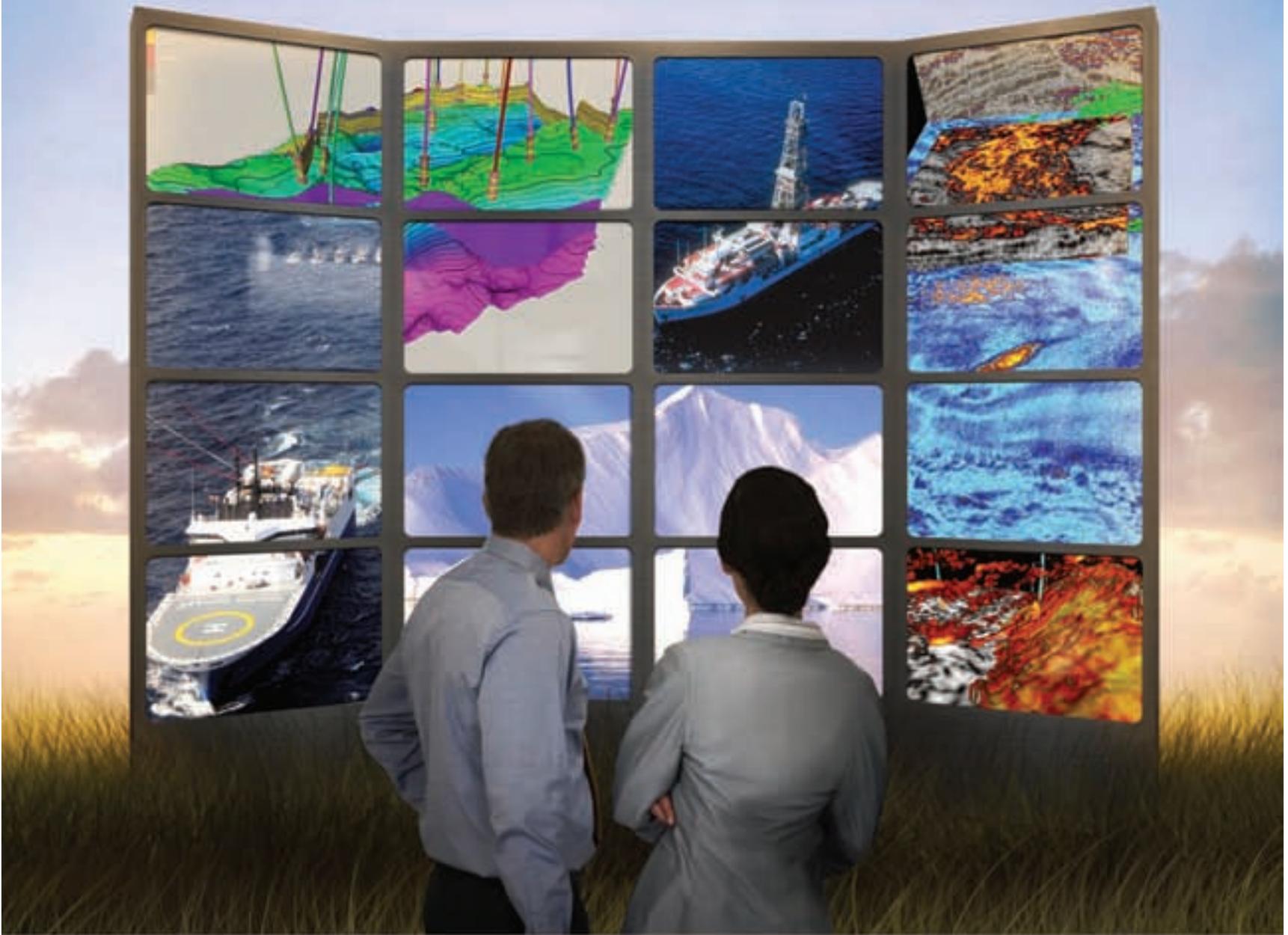
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California is the real OCS prize

Drill Bans Under Greater Scrutiny

By DAVID BROWN

EXPLORER Correspondent

For over two decades, the oil and gas industry has fought to open restricted offshore areas of the United States to drilling.

That effort primarily targeted the offshore ANWR (Alaska National Wildlife Refuge) area of Alaska and the eastern Gulf of Mexico.

Today, prospects for lifting the drilling ban look better than ever:

✓ President George W. Bush ended a long-standing presidential moratorium on offshore exploration in July.

✓ A nonpartisan group in Congress quickly came out in support of opening up exploration offshore Georgia, the Carolinas and Virginia immediately, if those states agree.

So, where will the industry want to head first if offshore drilling restrictions finally end?

Straight to sunny Southern California.

The reason for that likely choice

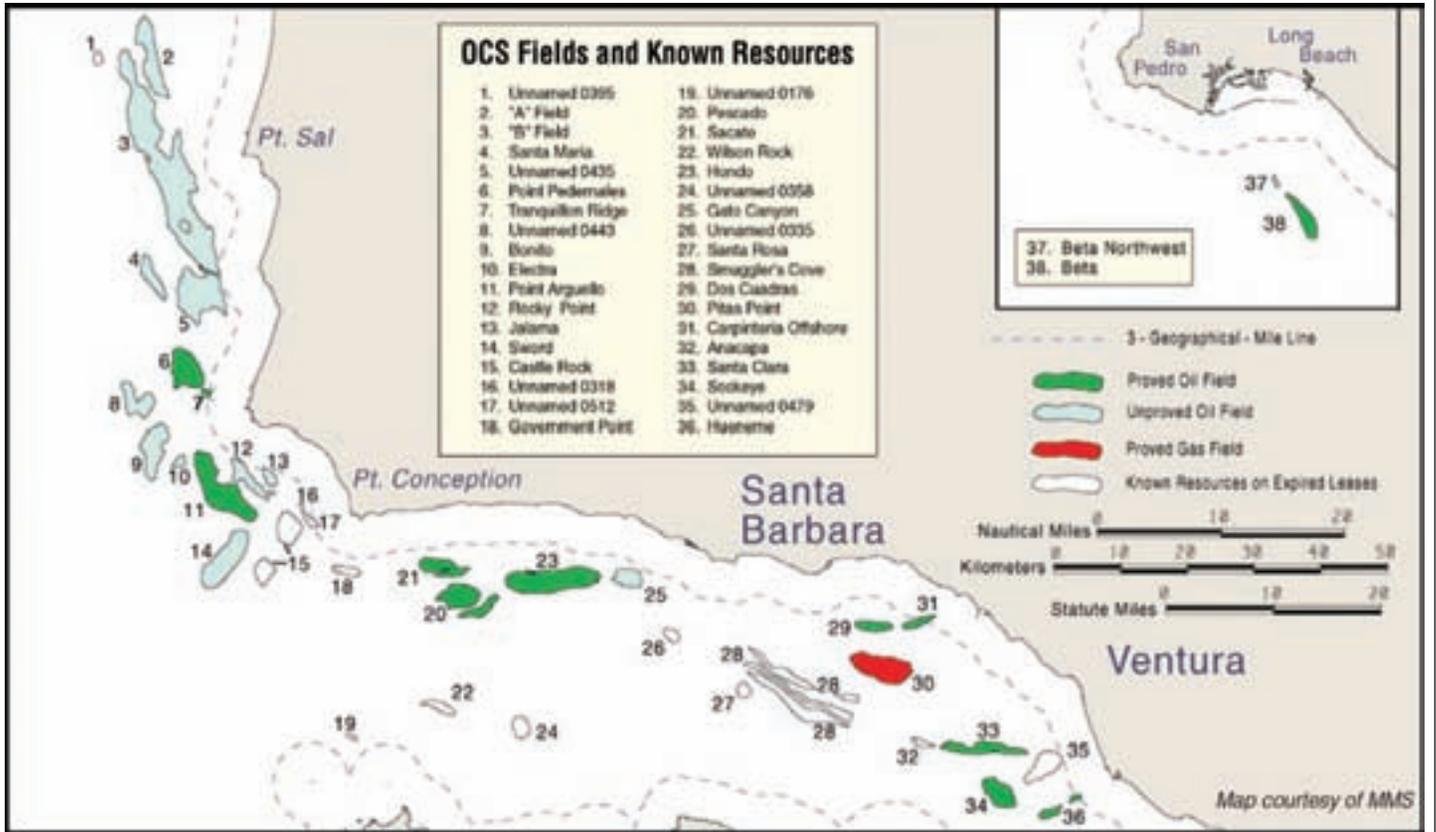
involves geology, crude oil prospectivity, weather conditions, existing infrastructure, access to markets and several other important considerations.

What's so great about offshore California?

"It's one of the richest petroleum systems in the world," said Karen Christensen, an AAPG



Christensen



member and partner and geophysicist for Silver Tip Energy and Spyglass Exploration & Production in Santa Barbara, Calif.

Much of California's offshore oil promise lies in Monterey formation-type rocks, or what the U.S. Minerals

Management Service (MMS) calls the

"fractured siliceous play."

"Here you've got the Monterey," Christensen noted, "and if it's in association with all sorts of traps, it's productive."

Regional Reports

According to the MMS, about 574 million acres of the U.S. Outer Continental Shelf (OCS) are currently off-

See **OCS**, page 10

New Z3000 technology reads like a geophysicist's wish list.

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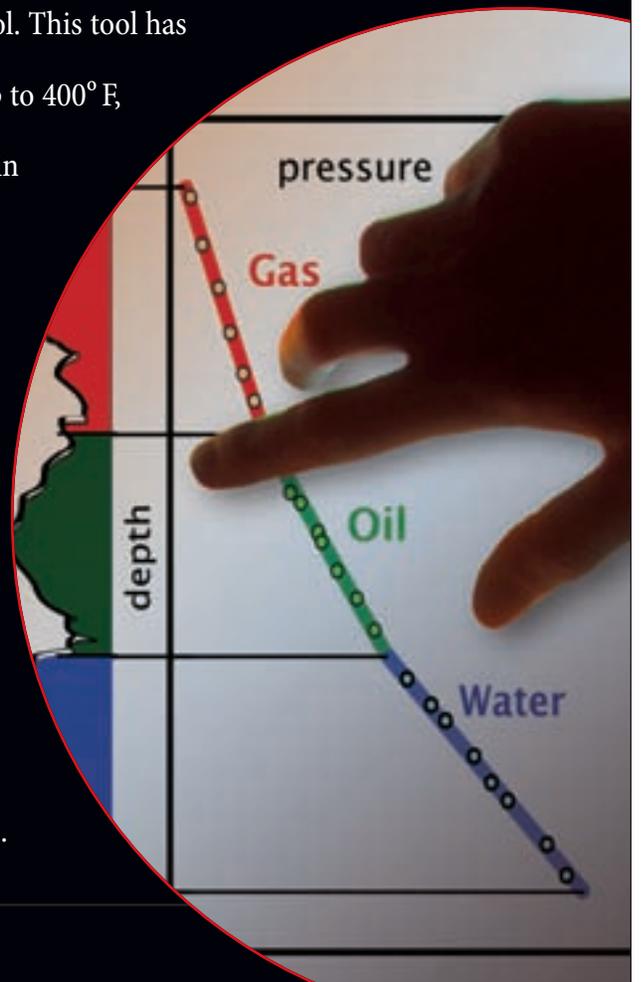


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OCS

from page 8

limits to leasing and development.

It evaluated the OCS hydrocarbon potential of Alaska, the Pacific Coast, the Gulf of Mexico and the Atlantic Coast in its "Assessment of Undiscovered Technically Recoverable Oil and Gas Resources of the Nation's Outer Continental Shelf, 2006."

The MMS mean estimate of total technically recoverable resources of the U.S. OCS was 85.88 billion barrels of oil and 418.88 trillion cubic feet of gas.

In estimating economically recoverable OCS resources, the highest price levels the MMS projected were \$80/barrel and \$12.10/Mcf. At those levels, it forecast recovery of 73.4 Bbo and 330.54 Tcf.

Oil and Gas Resources in OCS Areas Unavailable for Leasing and Development

OCS Areas Withdrawn from Leasing	Area (million acres)	Undiscovered Technically Recoverable Resources (mean estimate)	
		Oil (Bbbls)	Natural Gas (Tcf)
Washington-Oregon	71.00	0.40	2.28
Northern California	44.79	2.08	3.58
Central California	43.68	2.31	2.41
Southern California*	88.99	5.58	9.75
Central, Eastern Gulf of Mexico*	65.87	3.65	21.46
North, Mid and South Atlantic	259.53	3.82	36.99
Total:	573.86	17.84	76.47

* Does not include resources in areas already under lease.

Using either approach, the most significant productive and prospective OCS area by far was the central Gulf of Mexico, with a mean technically recoverable resource of 30.32 Bbo and 144.77 Tcf.

And second was not offshore ANWR or even Alaska's Beaufort Sea – high profile areas in the public debate – but the Chukchi Sea OCS area offshore northwestern Alaska.

That area had an estimated

recoverable resource of 15.38 Bbo and 76.77 Tcf.

The central and western Gulf of Mexico areas have become the prime driver for offshore U.S. oil production.

The Chukchi Sea remains almost unexplored. But in February this year, the MMS held a successful lease sale that included about a million square miles and 5,355 whole and partial Chukchi Sea blocks.

That sale drew \$2.66 billion in high bids on 488 blocks, with Shell and ConocoPhillips the leading bidders.

Ice in Your Drink

Christensen is probably one of the few experts who has worked evaluations in both the Chukchi Sea and offshore California.

The MMS held earlier offshore northwest Alaska lease sales in 1988 with 350 leases issued and in 1991 with 28 leases issued.

"In the Chukchi Sea a number of leases were bought by majors, including Texaco and a Conoco-Shell venture, at the time. They drilled five wells, I think, on big, big structures," Christensen recalled.

"The problem was at that point it took many billions of barrels to reach an economic field size," she said.

Northwest Alaska's large offshore area could become a production powerhouse at some point, but Southern California has certain advantages for exploration.

First, the waters off California tend to freeze less often than the waters off Alaska.

And California gets a lot fewer icebergs.

Christensen described 100-foot-plus water depths in the Chukchi Sea where the sea-bottom is so heavily gouged that pipelines would be problematic.

"When you've got the whole ice pack moving south, how do you put a platform in the middle of it?" she asked. "That's a real logistical challenge."

California's existing production also provides an infrastructure in-place and near-shore for future development.

Offshore northern Alaska problems include not only weather and remoteness but a lack of gathering and transportation facilities, especially for natural gas.

A proposed Trans-Alaska gas pipeline could take 10 years to build.

"The Japanese have tried to get the ability to come in with tankers so there are absolutely things that can be done with the gas," Christensen said.

"The question is, what's the timeframe for that?"

Signs of Success?

All together, areas currently available for leasing contain about 80 percent of the total recoverable OCS production in the MMS assessment.

Is the industry undertaking a largely symbolic fight to open offshore areas for drilling?

Not when it comes to California.

Offshore California has a technically recoverable OCS oil resource of more than 10.1 Bbo, according to the MMS. That compares to 3.88 Bbo for the eastern Gulf of Mexico and 1.91 Bbo for the North Atlantic OCS area.

The 2006 MMS assessment for the offshore Pacific region closely reflects the agency's previous assessment for that region, according to Ken Piper.

Piper is senior geophysicist for the Office of Reservoir Evaluation and Production (OREP), MMS Pacific OCS Region in Camarillo, Calif., and served

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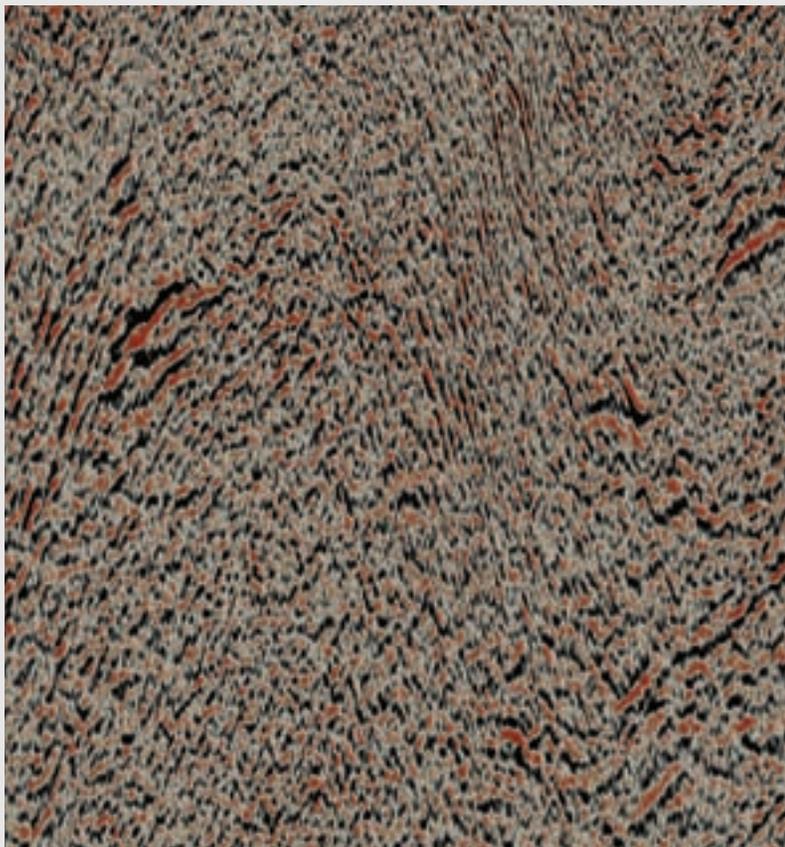
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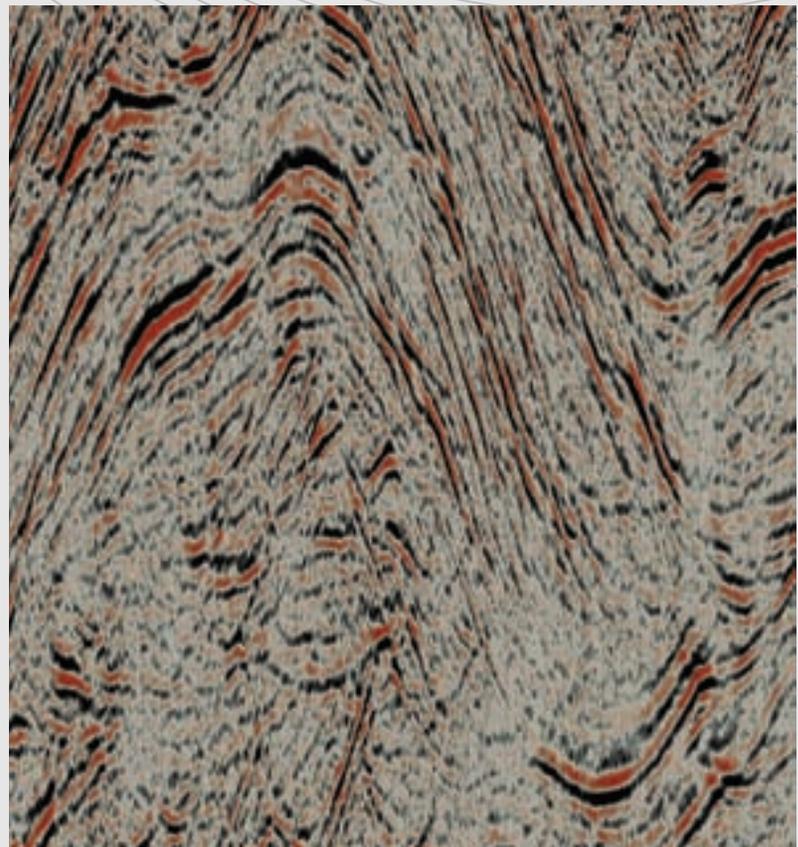


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Potential

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as a lead researcher for the assessment.

"The only thing we changed in the Santa Maria Basin area included a revision of field studies," he said. "There was a slight change in that there's been more production, so the reserves numbers have changed a little.

"The other thing is that the economic assessment numbers are reflecting higher dollar values," he added.

In a previous MMS assessment, the region's top five prospects were Monterey reservoir-type plays in the Santa Barbara-Ventura Basin and offshore central California.

Nine of 46 assessed plays contained Monterey-type rocks, but those nine plays accounted for more than half of the projected undiscovered oil and

Still, there are signs that high crude prices and \$4-a-gallon gasoline have changed attitudes – even on the West Coast.

about a third of the undiscovered gas.

Piper said the fractured siliceous plays still comprise the most important targets from offshore Mendocino to south of the Santa Barbara Channel – the Los Angeles Basin, offshore Long Beach and offshore Oceanside – where formations tend to include more clastics.

Off southernmost California, a lack of well data makes the assessment work more challenging.

"Only two coreholes have been drilled in the offshore Oceanside-Capistrano Basin area and both are on the northeast side of the Newport-

Inglewood Fault near the federal/state boundary," said AAPG member Drew Mayerson, chief of the MMS Pacific OCS Region OREP in Camarillo.

Both coreholes were relatively shallow – but the Mobil San Clemente did penetrate Pliocene and Miocene sediments, presumably of the Capistrano and Monterey Formations, he said.

"However, high-quality seismic data has been collected on the federal side and it shows a deep basin with well-defined folds all the way up to the Newport-Inglewood Fault Zone, one of

the most prolific oil and gas trends in the Los Angeles Basin," Mayerson noted.

Reality Check

Before the industry starts looking for capital to drill offshore California, it might need to write itself a reality check.

Much of the MMS OCS central California assessment area will be off-limits by inclusion in national marine sanctuaries, including the Cordell Bank and Monterey Bay sanctuaries.

"A lot of the central California areas are in the marine reserve sanctuary," Mayerson noted. "The large part of the Bodega Basin is in a marine sanctuary or a proposed sanctuary."

And California's tendency toward heavy oil is no secret, with some crude in the 10-16 degree API gravity range.

"It varies in parts of California where we have discoveries as high as 34 degrees (gravity), so it can be quite variable depending on where you are," Mayerson said.

If the offshore drilling ban is lifted, the MMS would have to begin the process of identifying areas for leasing and establishing lease sales. That will depend on which areas are available.

"Over 90 percent of the oil offshore the West Coast is within 25 miles of the coast," Mayerson noted.

"There are some proposals out there that say it's OK to drill 50 miles or more offshore," he said. "That would do very little for offshore California."

The Tide Turns

Then there's the question of whether or not the current drilling restrictions will end at all.

In the U.S. Congress, five Democrats and five Republicans have joined together for energy policy reform, calling themselves the Gang of 10.

They proposed a New Energy Reform Act of 2008 – or New ERA – that would open offshore South Atlantic and Mid-Atlantic areas for exploration.

But those areas had a combined total OCS recoverable resource of only 1.91 Bbo and 18.99 Tcf in the MMS assessment, about the same as the North Atlantic OCS area.

In July, Bush lifted a Presidential moratorium on offshore drilling put in place by his father, President George H.W. Bush, in 1990 and extended to 2012 by President Bill Clinton.

George W. Bush has challenged Congress to end its own offshore drilling restrictions, so far without action.

If individual states receive decision-making authority or influence for opening offshore areas, California might opt out.

Still, there are signs that high crude prices and \$4-a-gallon gasoline have changed attitudes – even on the West Coast.

John Minch, a longtime active AAPG member and principal of John Minch and Associates in Santa Barbara, noted California's longstanding antipathy toward offshore drilling proposals.

Since the 1969 Santa Barbara oil spill – actually a blowout on a Union Oil platform six miles offshore – "there's been a tremendous number of people against it," he said.

Now Minch senses a turn in the offshore tide.

"Things have changed dramatically. I honestly think you are going to see a real change of attitude," he said.

One sign of that shift is a recent action by the Santa Barbara County Board of Supervisors.

"The County Board of Supervisors met earlier this week (early September) and asked the state to pursue offshore drilling," Minch said, and added:

"I never thought I'd ever see that." □



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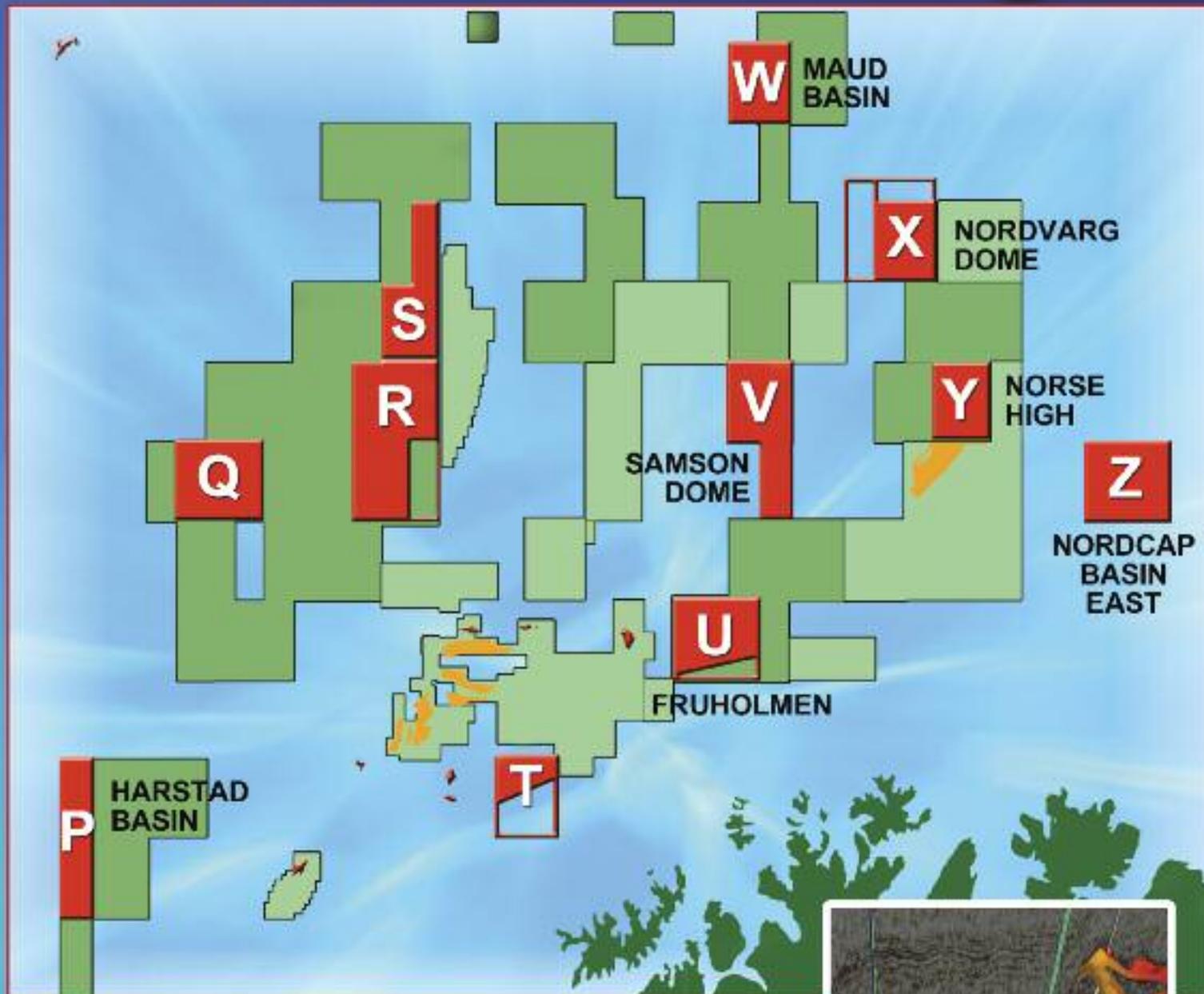
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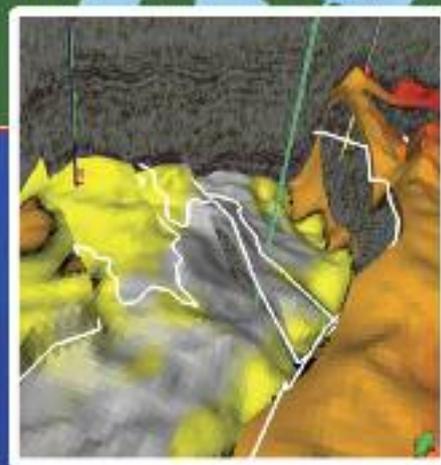


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Libya, UK rank high**Egypt Gets Interest from Explorers**

By LARRY NATION

AAPG Communications Director

What area most intrigues petroleum explorers?

One insight into that answer is available courtesy of Fugro Robertson, which conducts its "International New Ventures Survey" each year. To execute the survey, confidential questionnaires are distributed to oil companies involved in E&P ventures outside North America.

The companies are asked to rate their level of interest in new ventures in 158 countries as well as in four frontier regions of the United States and Canada.

Country rankings are assembled and then analyzed to identify the determinants influencing their movement up or down from the previous year.

Egypt was ranked first for 2008.

The country captured the top spot, moving up from second place last year. It bumped the United Kingdom down to a tie for second place from the number one position it claimed in 2007.

Fugro Robertson noted that with six countries in the Top 10, Africa is the most popular region once again, with West Africa being represented by Gabon and Angola.

In 2007, Egypt produced 664,000 barrels of oil daily continuing its fall from a high of 950,000 bod in 1995, the U.S. Energy Information Administration reported in August. Yet, production was sufficient to prevent Egypt from becoming a net importer of oil as some had predicted.



Photo courtesy of Apache Corp.

Explorers' interest in Egypt has been pumped up by 2008 licensing rounds.

Egyptian production and consumption of natural gas continue to rise with a total of 1.9 Tcf produced and 1.3 Tcf consumed in 2006, making Egypt a net gas exporter.

The offshore Saqqara field, discovered in 2003 and representing the largest new crude oil discovery in Egypt since 1989, went online last May.

Adjacent to the existing El-Morgan field, Saqqara reached a flow rate of 30,000 bod and is expected to reach a peak production of around 40,000 to 50,000 bod.

In early 2008 the government

launched licensing rounds offering about 20 and 30 blocks.

As for the rest of the world, the biggest movers in the 2008 list was Thailand, jumping from 57 to 14; Vietnam, from 22 to the number six spot; Malaysia from 24 to 10; and India from 28 to 16.

Southeast Asia/Australasia is the second most alluring region.

Fugro Robertson noted that Norway, usually a strong performer, dropped from 12th in 2007 to spot 18, tied with Equatorial Guinea and Peru, which joined the top 20. □

**The Top 20 Countries**

1. Egypt (2)
2. Libya (5), United Kingdom (1)
4. Tunisia (7)
5. Indonesia (6)
6. Colombia (7), Gabon (9), Vietnam (22)
9. Algeria (3)
10. Angola (14), Iraq (17), Malaysia (24)
13. Australia (4)
14. Oman (18), Thailand (57)
16. Brazil (13), India (28)
18. Equatorial Guinea (21), Norway (12), Peru (25)

(Last year's ranking in parenthesis.)

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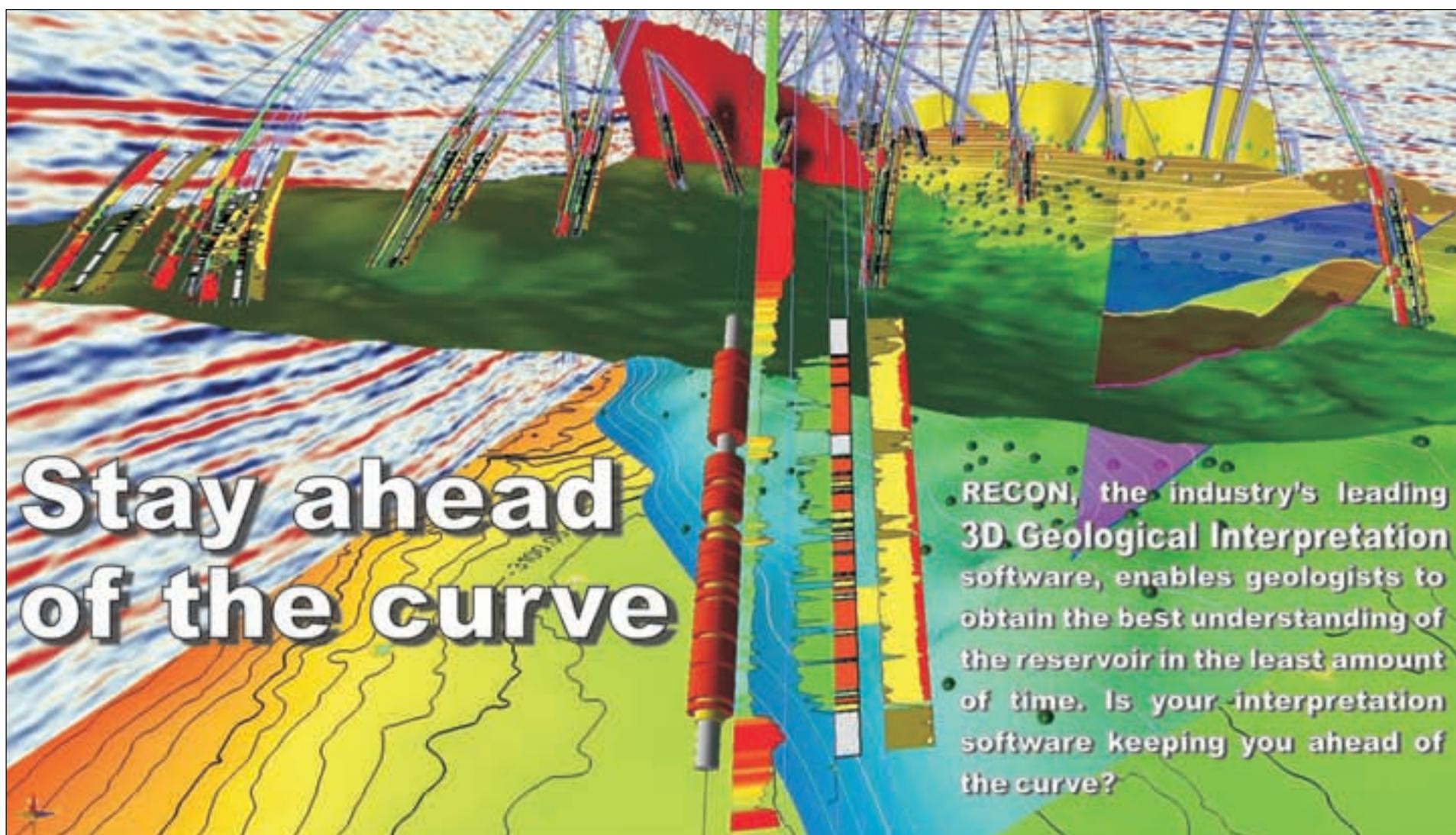
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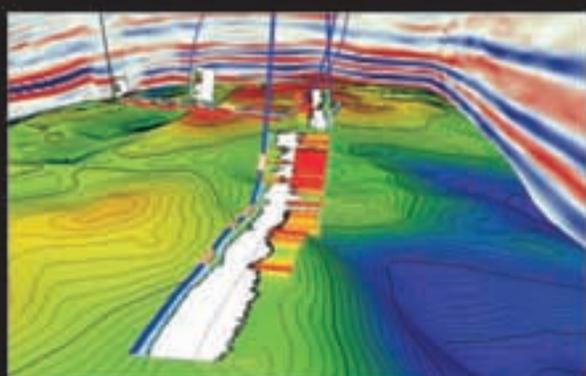
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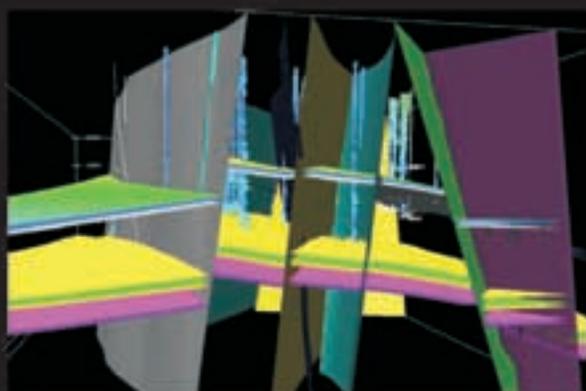
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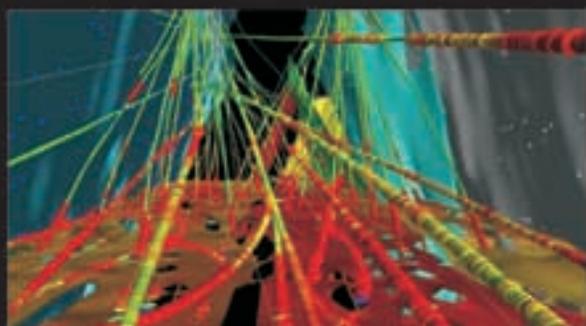
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Multiple targets lower risk**Gas Success Fuels Interest in Egypt**

By LOUISE S. DURHAM
EXPLORER Correspondent

A lot of countries promise big potential for the coming exploration season, but only one could head the list.

According to those who responded to Fugro Robertson's annual New Ventures Survey, the 2008 winner is...

Egypt.

Those who have been following the international scene won't be surprised.

The hot resource there is natural gas – in fact, it is forecasted to be the primary growth engine of Egypt's energy sector for the foreseeable future, according to the Energy Information Administration (EIA).

Major recent discoveries are the driving force for this growth.

Most current exploration and production is focused in the Nile Delta region and the Western Desert, according to the EIA.

Specifically, the most important natural gas fields in the Western Desert are located in the Obeiyed and Khalda areas, according to the agency, because they have lower development and operating costs than fields in the Mediterranean region thanks to an expanding network of pipelines and processing plants that enable quick transport to Alexandria via a 180-mile pipeline.

Apache Corp. lays claim to being the largest acreage holder and most active driller in Egypt. Its acreage position tallied 18.9 million gross acres in 23 separate concessions (19 producing concessions) at the end of 2007.

The company is the third largest producer of liquid hydrocarbons and natural gas in the country, and it maintains a major presence in the Western Desert, where it's

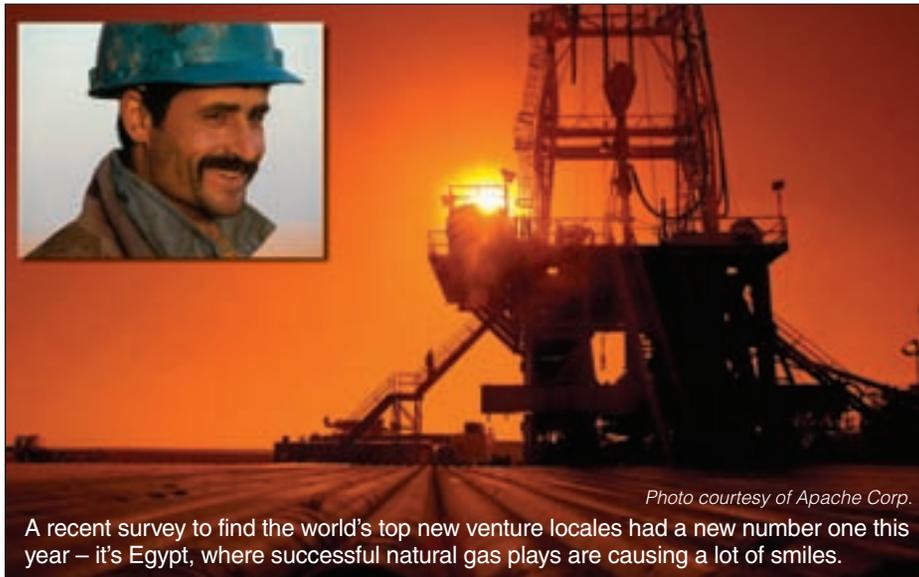


Photo courtesy of Apache Corp.

A recent survey to find the world's top new venture locales had a new number one this year – it's Egypt, where successful natural gas plays are causing a lot of smiles.

the top producer as well as the most active driller.

In fact, Apache drilled the largest discovery in its history in 2003 at the Qasr field on its Khalda concession in the Western Desert. The discovery had gross proved reserves of 2.5 Tcf of gas and 80 MMbo of condensate.

Qasr production is from the Jurassic Lower Safa formation, which is a thick package of amalgamated braided fluvial sandstones having good to excellent reservoir characteristics, according to AAPG member Fred Wehr, deputy exploration manager for Khalda Petroleum Company/Apache.

Wehr noted that Qasr has additional production from the shallower Cretaceous Alam el Bueib formation.

"Most of our targets (in the Western Desert) are multiple targets," Wehr said, "and, especially in the Cretaceous reservoirs, this has allowed us to use the lower risk target as a kind of safety net and try some interesting and kind of risky things."

"You couldn't justify trying this with a single objective," he added, "and if these things work they can be used in other wells."

Being able to stack up targets is one of the ways over the last five years his company "grew production in the Khalda concession," Wehr noted, "going into existing fields and really jerking them hard with a lot of infill drilling."

The company struck an MOU with the Egyptian government to double its production by year-end 2010. The program



– referred to in-house as "two times production," or 2X – is making great strides, according to Wehr.

"We're meeting our targets, which is extremely gratifying," he said. "We're increasing our drilling and have a very aggressive exploration program coming up."

"The really good story this year is the infill drilling and full implementation of the waterflood patterns in the Bahariya (formation)," Wehr said. "Our surge in liquids growth in 2008 has been driven largely by that program."

"We're doing a lot of black oil development drilling," he noted, "and our exploration program is shifting more and more to deep gas exploration to replace reserves we're beginning to produce from Qasr and our other gas fields, as we increase (infrastructure) capacity."

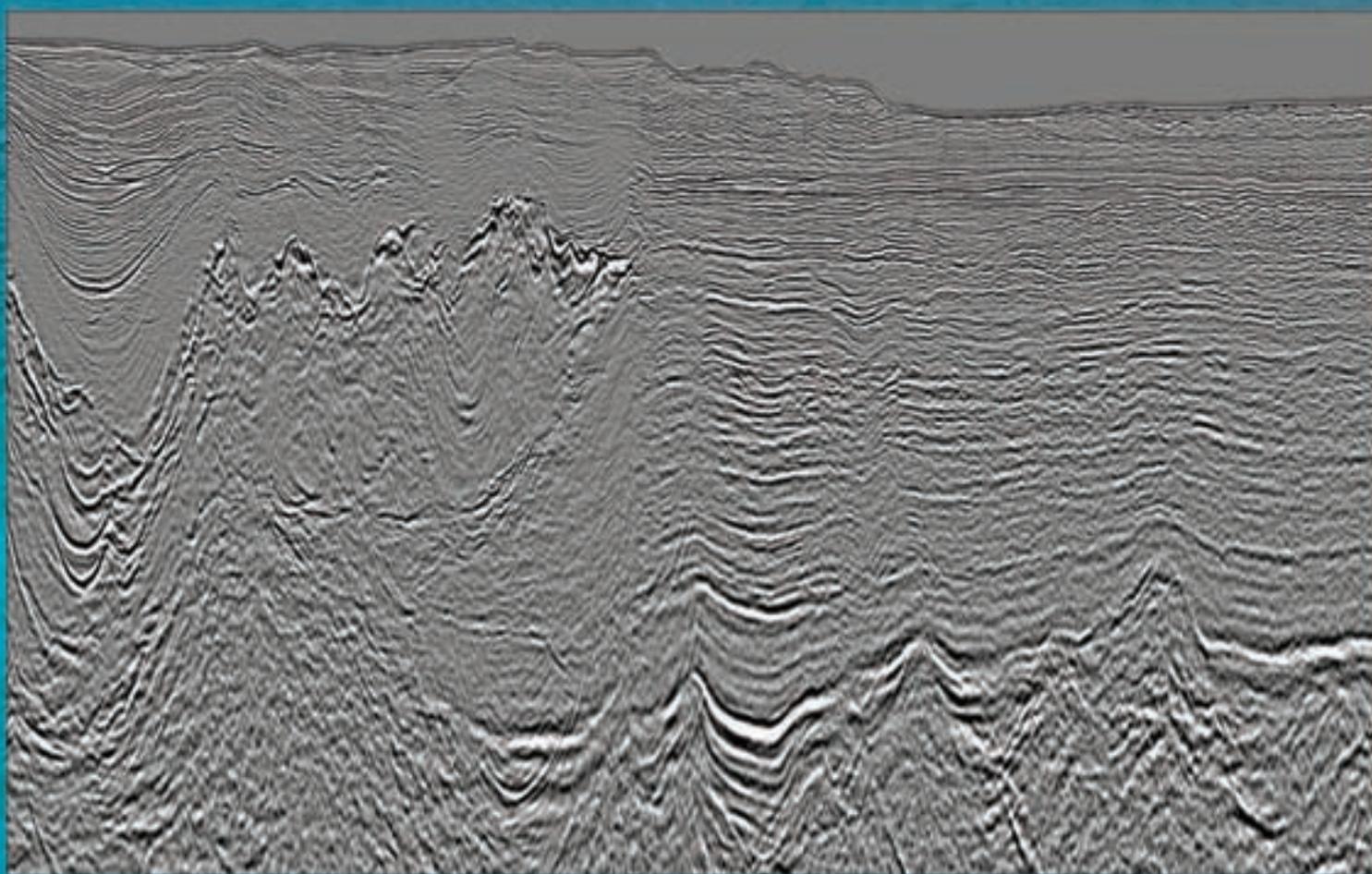
"We're waiting on the infrastructure to really turn the gas on," Wehr said.

In fact, new processing trains will soon come on at Salam (Khaldia) to handle Qasr and other deep gas, according to Bill Mintz, director of public affairs at Apache.

Salam Plant Trains 3 and 4 are scheduled for completion in the last quarter of 2008 and will add 200 MMcf/d capacity, with net to Apache being approximately 100 MMcf/d and 5,000 barrels of condensate.

Plant Train 5, set for mid-2010 completion, will add 100 MMcf/d of processing capacity (50 MMcf/d and 2,500 barrels of condensate net). □

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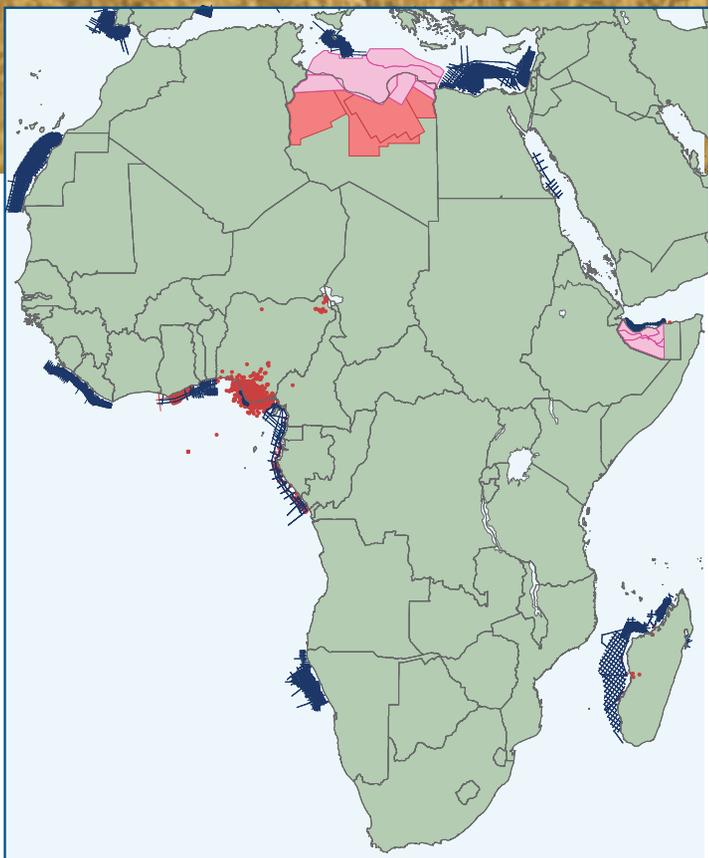
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Lots to explore

Libya Emerging as Attractive Play

By LOUISE S. DURHAM
EXPLORER Correspondent

Egypt clearly is hot in the international arena, but the scene at its neighbor to the west – Libya – appears close to being equally spicy.

In fact, Libya captured the number two spot in the country rankings from the Fugro Robertson annual New Ventures Survey.

The oil companies' interest in Libya has been on the upswing following the lifting in 2004 of economic sanctions imposed by the United States, which placed the country off limits to investments by domestic companies.

Interest in Libya has been on the upswing following the lifting in 2004 of economic sanctions.

With its vast, largely unexplored areas, Libya has long been viewed as one of the most appealing exploration regions on the international scene. In fact, it harbors an estimated 36 billion barrels of high quality oil reserves, according to the EIA.

Adding to the appeal are relatively low production costs and geographic proximity to Western markets.

ExxonMobil is a high profile player in Libya – for the second time you might say.



Prior to merging, both Exxon and Mobil had been among the earliest players to enter Libya in the 1960s. Before exiting the country prior to the sanctions, total production between the two companies exceeded one million barrels per day, according to Russ Bellis, exploration director at ExxonMobil International.

The company re-entered Libya in 2005.

“Our objectives have not changed from what they were originally, which is to build a material presence and work with the Libyan National Oil Corporation (LNOC) to fully exploit, find and further develop hydrocarbon resources in Libya,” Bellis said.

“It’s a simple, broad-based strategy.”

‘A Plum Spot’

The company recently was awarded an Exploration and Production Sharing Agreement (EPSA) with the LNOC, which was ratified in June by the General People’s Congress, Bellis noted. The EPSA is for Contract Area 21 about 110 miles offshore in the Sirte Basin, which is said to be a world-class petroleum province.

Contract Area 21 is in water depths that range from 5,400 feet to 8,700 feet.

It’s likely a plum spot.

“Based on what’s remaining in the offshore area, our assessments would indicate it would have the most significant remaining undrilled potential,” Bellis said, “because it’s an untested block in the Libyan offshore.”

The company was given the green light to commence its now-completed 2-D seismic recording effort over the area prior to ratification of the EPSA. This enabled continuous shooting with the 2-D vessel used on Contract Area 20 just to the west.

The company currently is recording 3-D seismic on Area 20.

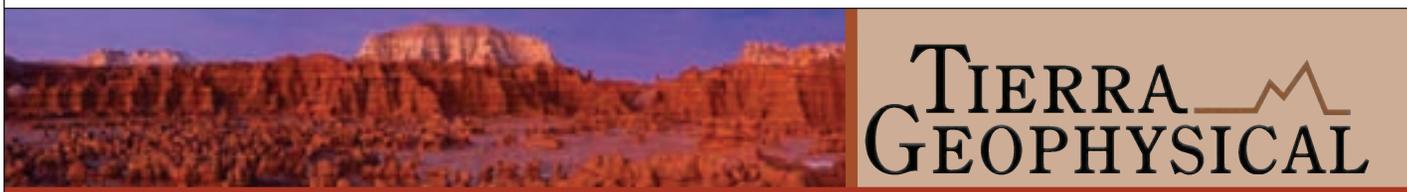
Meanwhile, Bellis noted they are awaiting results of their proprietary version of seabed logging recorded earlier in the year on Contract Areas 21 and 44, located off the country’s northeast coast.

“We have a deepwater drilling vessel contracted,” Bellis said, “and we’ll most likely drill two wildcat wells in late 2009 within the three Contract Areas we have.”

He gives kudos to the United States and Libya for making this activity possible.

“We’re very pleased with the progress that appears to be being made between Libya and the United States in terms of resolving the issues and coming to an agreement in terms of settlements for various historical activities,” Bellis said.

“It’s our desire to maintain a presence there for a long time.” □



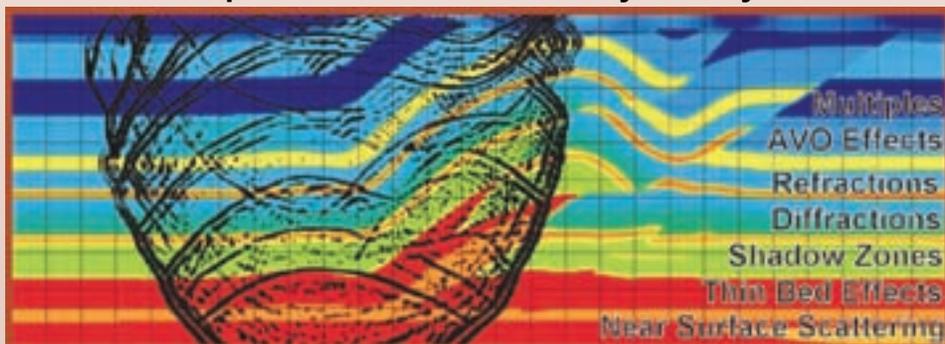
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*Ambiguities cloud definitions, boundaries***Geology Matters in Law of the Sea**

By LOUISE S. DURHAM
EXPLORER Correspondent

It's an icy region, but when it comes to real estate the Arctic seafloor is hot.

Today, countries that rim the Arctic Ocean are working diligently to collect data that will help them to provide the evidence needed to extend their coastal territory further out on the continental shelf than the typical 200 nautical miles.

In fact, they're eyeing the North Pole in some instances.

The countries involved in the effort are:

- ✓ Canada.
- ✓ Denmark.
- ✓ Norway.
- ✓ Russia.
- ✓ United States.

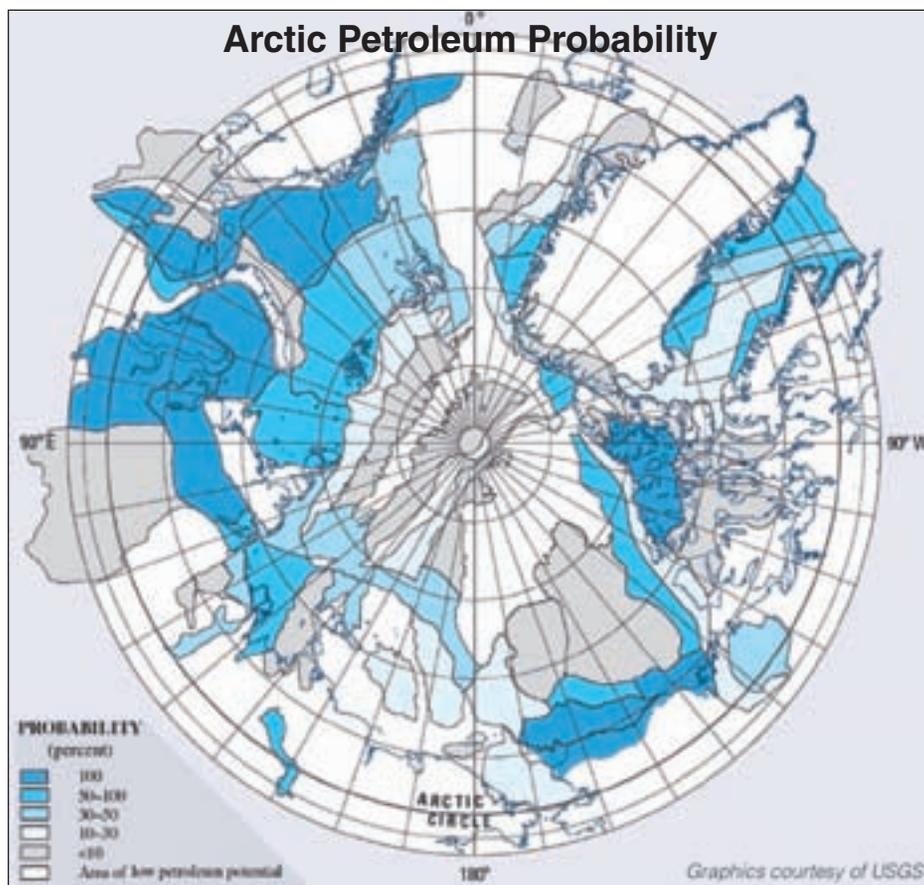
In case you're wondering why anyone would want to own the North Pole – aside from bragging rights – there's potential treasure to be found in this region atop the world.

The Arctic may harbor as much as 22 percent of the technically recoverable resources in the world, according to a U.S. Geological Survey assessment.

The recently released results of the assessment revealed the area north of the Arctic Circle holds:

- ✓ Estimated 90 billion barrels of undiscovered, technically recoverable oil.
- ✓ 1,670 trillion cubic feet of technically recoverable natural gas.
- ✓ 44 billion barrels of technically recoverable natural gas liquids.

The magnitude of the estimated resources no doubt will provide even more impetus for the Arctic-bounding countries to make the case to extend their coastal



territory, given they would also acquire sovereign rights over the resources of the seafloor and the subsurface.

Planting the Flag

Any territorial extensions into the Arctic

will be granted via an orderly process in accordance with provisions of the 1982 U.N. Convention on the Law of the Sea, which established mineral resource rights and responsibilities. The United States has signed the treaty but the Senate has yet to ratify.



The countries jockeying to extend their coastlines are allowed 10 years from the date of ratification of the treaty to submit a claim. The Russians rushed right in to ratify and followed up by submitting a claim eight years ahead of their deadline, according to Ron Macnab, Geological Survey of Canada (retired).

Last month Russian president Medvedev said Russia must formally set its borders in the Arctic region in the near future.

Norway also submitted early, and Canada and Denmark must submit by 2013 and 2014 respectively.

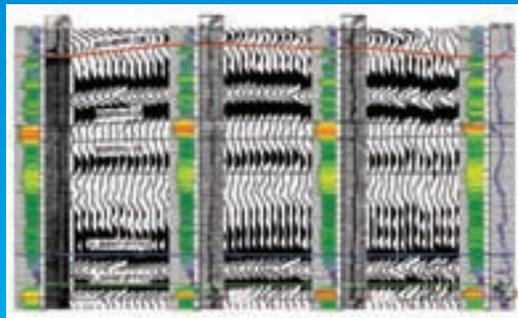
The undisguised eagerness of the Russians was on full display last summer when they dropped a flag on the seafloor at the North Pole via a mini-sub – to the consternation of the other countries involved in the boundary issues.

Some critics labeled the flag planting a

See **Arctic**, page 23

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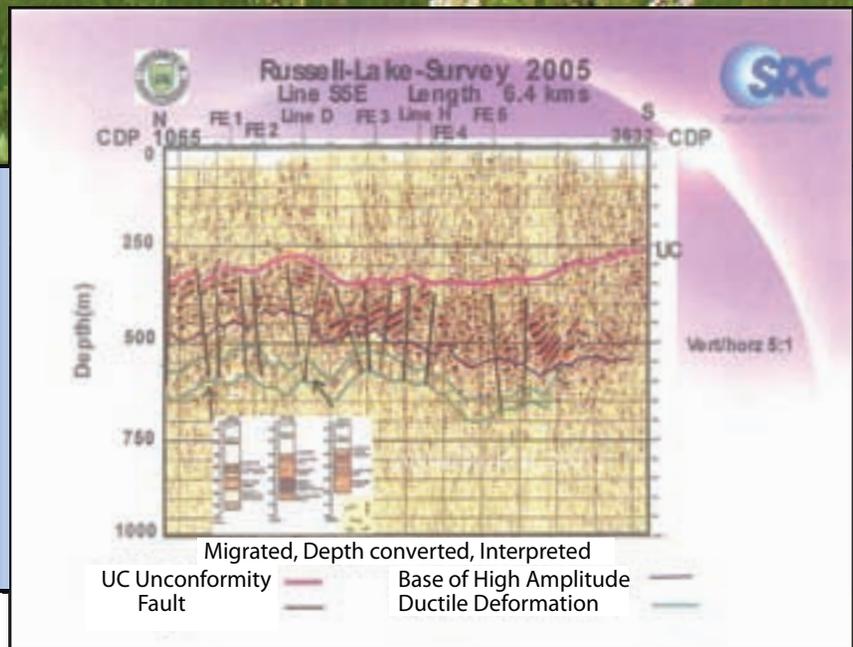
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Most within territorial limits

Oil Survey Says Arctic Has Riches

By LOUISE S. DURHAM
EXPLORER Correspondent

The U.S. Geological Survey recently completed an assessment of undiscovered conventional oil and gas resources in all areas north of the Arctic Circle – and the numbers are a bit eye-popping.

In fact, the agency concluded that 90 billion barrels of oil, 1,669 trillion cubic feet of natural gas and 44 billion barrels of natural gas liquids may remain in the Arctic, awaiting discovery.

More than 70 percent of the mean undiscovered oil resource is estimated to occur in five provinces:

- ✓ Arctic Alaska.
- ✓ Amerasia Basin.
- ✓ East Greenland Rift Basins.
- ✓ East Barents Basin.
- ✓ West Greenland-East Canada.

Three provinces are thought to hold more than 70 percent of the undiscovered natural gas:

- ✓ West Siberian Basin.
- ✓ East Barents Basin.
- ✓ Arctic Alaska.

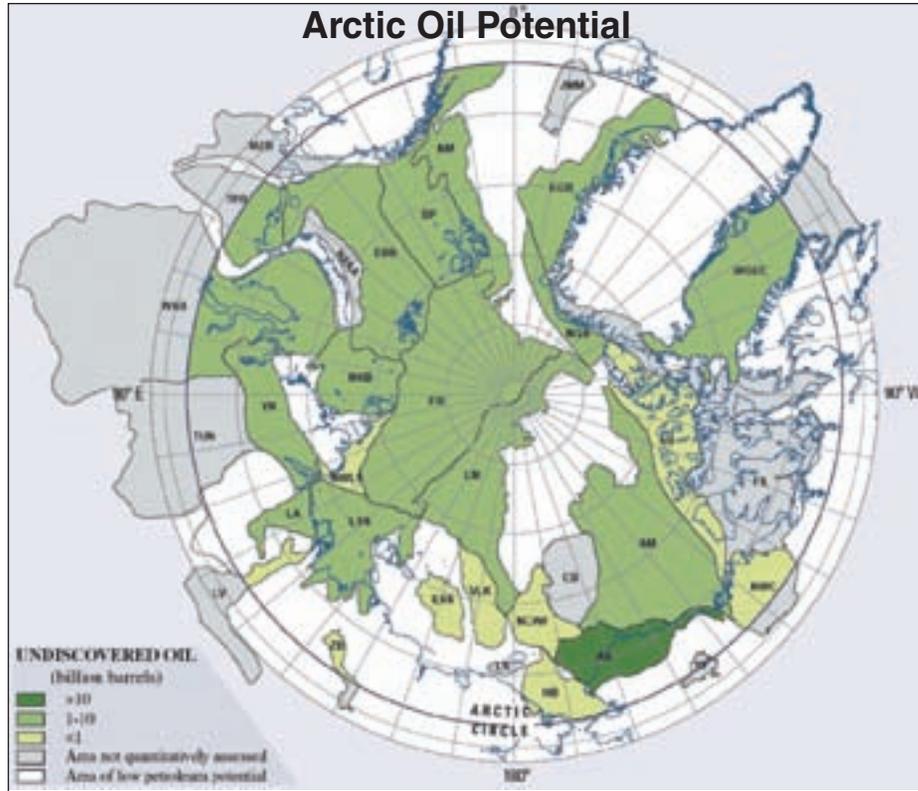
About 84 percent of the entire resource is expected to occur in offshore areas.

It is noteworthy that most of the resource is not under the North Pole but closer to shore in areas that aren't subject to territorial dispute.

"In our judgment,



Gautier



the undiscovered resources up there are concentrated between the shoreline and the 500 meter contour line," said AAPG member Don Gautier, USGS geologist and project chief for the agency's assessment, dubbed the Circum-Arctic Resource Appraisal (CARA).

"We would think that most of that is within the 200 nautical mile limit in one

way or another," he said.

Reviewing the Situation

The Arctic Circle encompasses about 6 percent of the earth's surface, and the extensive Arctic continental shelf region may constitute the largest remaining unexplored prospective hydrocarbon

AAPG is planning a "Polar Petroleum Potential" conference focusing on the geology and other issues of Arctic exploration Sept. 28-30, 2009.

The multi-nation program will be held in Moscow, Russia. RosGeo, the Russia geological society, will act as host.

A call for papers will be issued in January.

area, geographically speaking.

More than 400 oil and gas fields already have been discovered north of the Arctic Circle, primarily onshore and in Russia for the most part, Gautier noted. They account for approximately 240 billion barrels of oil and oil-equivalent natural gas.

This approximates 10 percent of the world's known conventional petroleum resources (cumulative production and remaining proved reserves).

The CARA included only resources determined to be technically recoverable using current technology. Regarding the offshore, the assumption is the resources would be recoverable even in the situation of permanent sea ice and oceanic water depth.

The estimates include no economic considerations. The study results include no reference to exploration and development costs, which would be

continued on next page

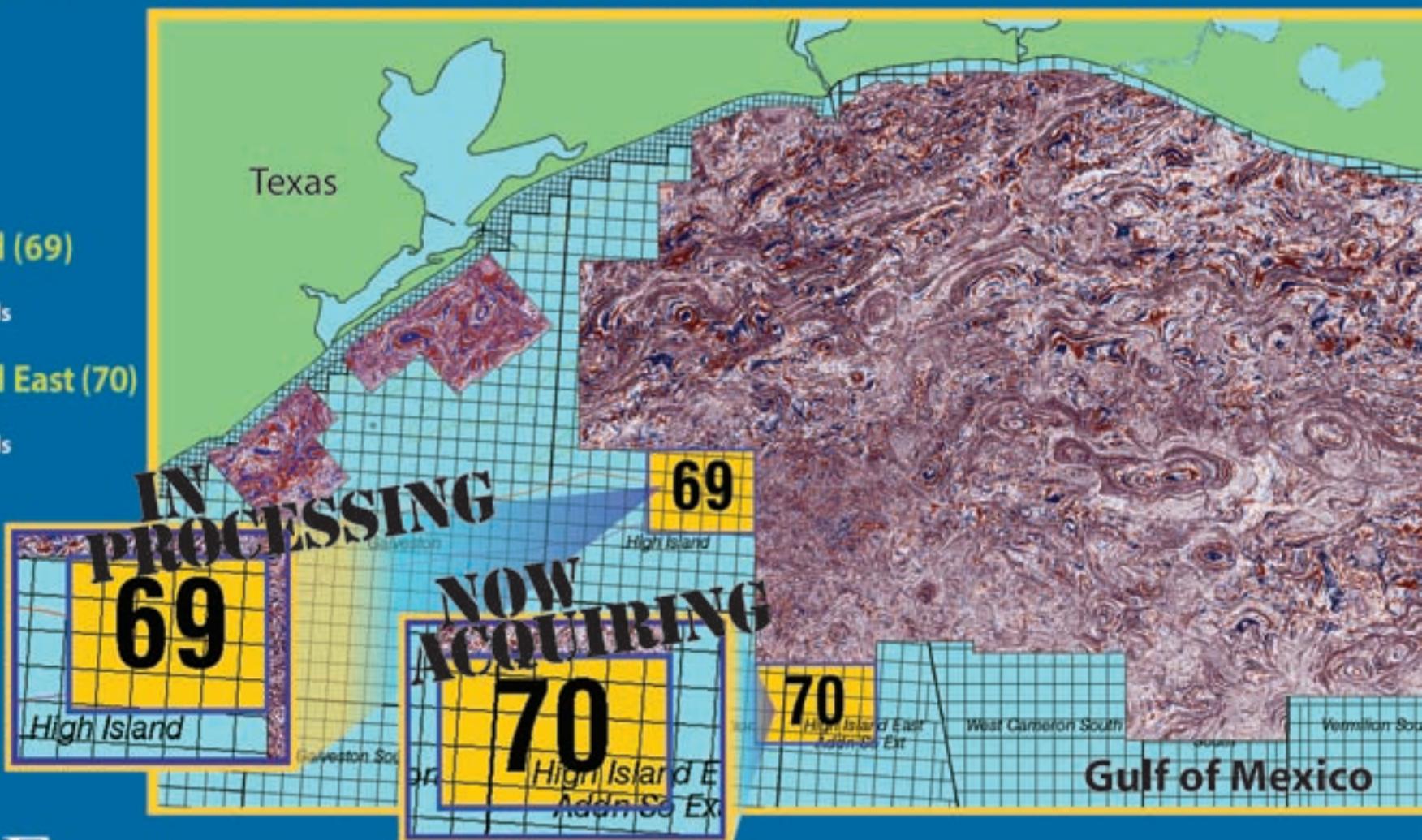
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considerable in this generally harsh environment.

Although any meaningful development of these resources is years away, it is perhaps fortuitous for the United States that the CARA revealed a sizeable amount of the oil resource is off the coast of Alaska, where some offshore drilling already occurs.

"About a third of the undiscovered oil was in the province we call the Arctic Alaska province," Gautier said. "This includes a lot of area of Chukchi Sea and part of the Beaufort Sea."

Most of the undiscovered natural gas is thought to be concentrated in the northern part of the western Siberian Basin, Gautier noted.

A major hindrance to Arctic exploration, particularly in the offshore areas, has been the near-permanent sea ice – an obstacle to both seismic data collection and exploratory drilling.

However, the ice cap has melted to some degree – whether permanently or temporarily – which could usher in a whole new era for exploration.

The Northwest Passage, for example, was open all last summer, according to Ron Macnab, Geological Survey of Canada (retired). He noted that for the first time in recorded history, one could have sailed a major ship all the way through the Passage.

A New Approach

Because of the dearth of seismic and drilling data in much of the Arctic, the CARA program differed from the typical USGS resource assessment that relies on discovery process modeling, prospect delineation and deposit simulation.

Instead, the CARA effort relied on a probabilistic methodology of geological

Arctic
from page 20

political stunt; Macnab views the prickly event with a more scientific eye.

"I think the people who did this were primarily interested in showing they have an Arctic capability that few if any other nations have," he said. "They could actually send a submersible down in polar pack ice, do some work on the bottom and bring it back safely."

"To me, this is not a reason to castigate them for trying some illegal

land claim," Macnab said, "but there have been a lot of claims about the inappropriateness of this."

"Everyone should just take a Valium," he said. "It's not the opening shot of World War III."

U.S. Activity

Despite not having ratified the treaty, the United States has been plenty busy mapping the Arctic seabed in preparation. Once it does ratify, the nation likely will be prepared to wrap its

See **Ownership**, next page

analysis and analog modeling.

Using a newly compiled map of Arctic sedimentary basins, the CARA team defined geologic provinces, each containing more than three kilometers of sedimentary strata, according to Gautier. Assessment units (AU) – mappable volumes of rock with common geologic traits – were identified within each province and quantitatively assessed for petroleum potential.

A world analog database was developed that includes areas accounting for more than 95 percent of the world's known oil and gas resources outside the United States.

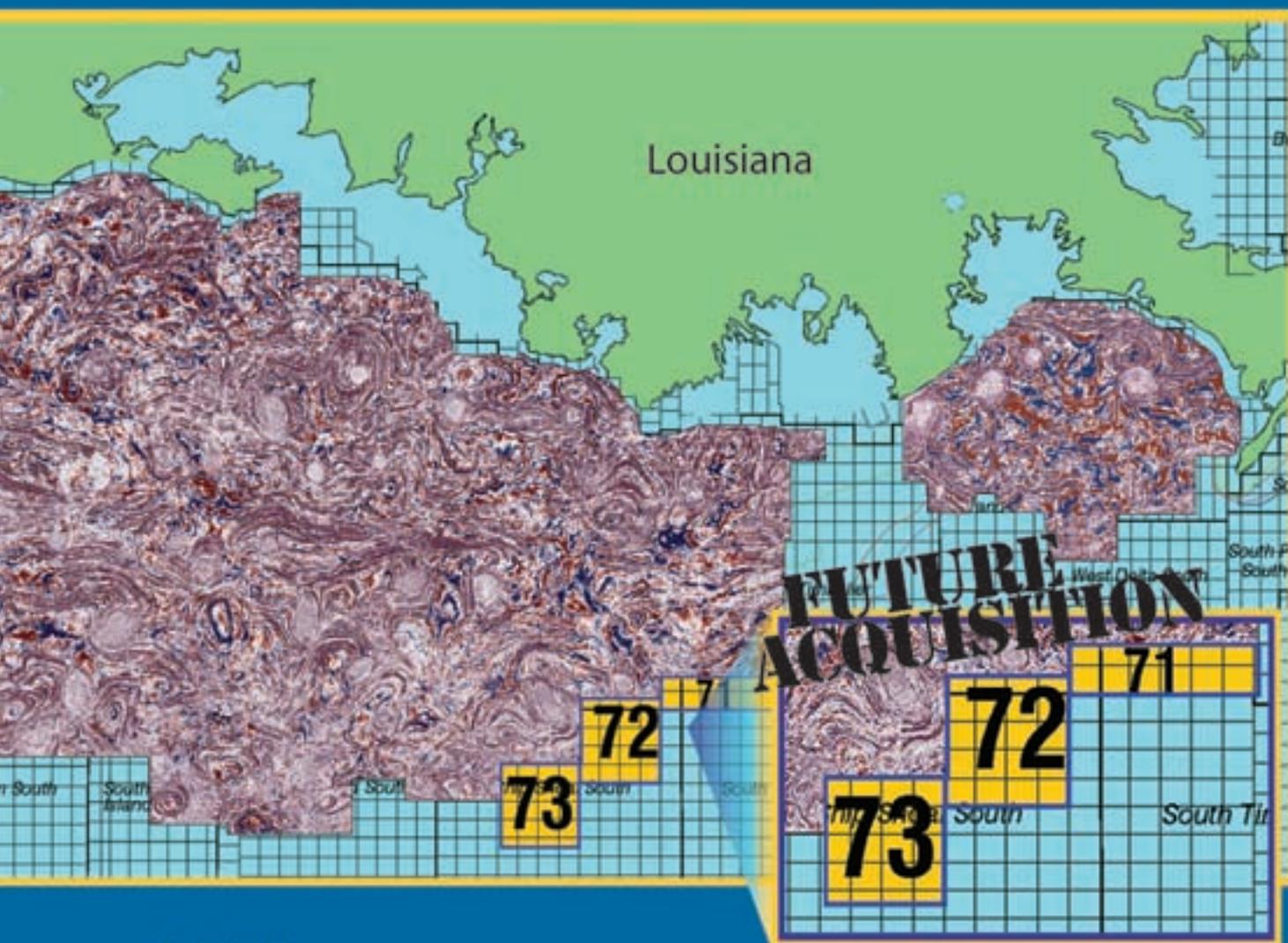
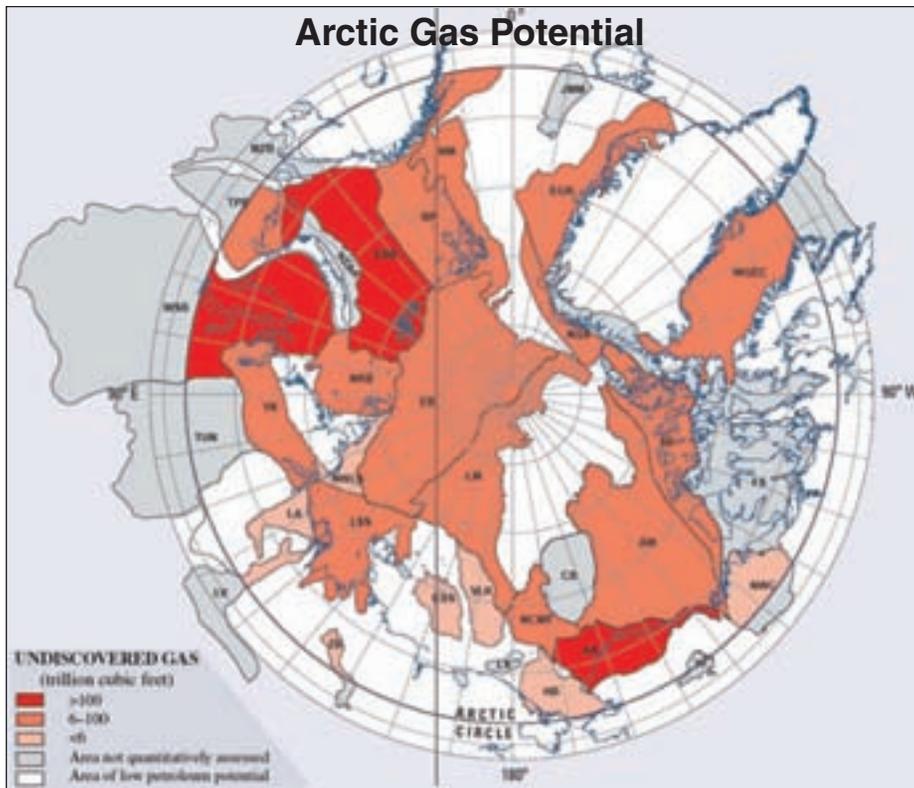
For each AU, the CARA team assessed the probability that a significant oil or gas accumulation was present. Evaluation of the AU probability was based on three geologic elements:

- ✓ Charge (including source rocks and thermal maturity).
- ✓ Rocks (including reservoirs, traps and seals).
- ✓ Timing (including the relative ages of migration and trap formation, as well as preservation).

Each AU was ranked according to its AU probability. The AUs determined to have less than a 10 percent probability of a significant accumulation (recoverable volumes of a minimum 50 million barrels of oil and/or oil equivalent natural gas) were not quantitatively assessed, according to Gautier.

He noted that in addition to the AU probability, the number of accumulations, the size-frequency distribution of accumulations and the relative likelihood of oil versus gas were assessed for each AU and combined by means of a Monte Carlo simulation.

"The probabilistic results reflect the wide range of uncertainty inherent in frontier geological provinces such as those of the Arctic," Gautier said. □



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from previous page

case in less than the allotted 10 years because it will have completed much of the expensive, necessary fieldwork.

In fact, the U.S. Coast Guard Icebreaker *Healy* recently undertook its fourth Arctic seafloor mapping excursion since 2003. In addition to the ongoing bathymetric work, a separate leg of the excursion was implemented as a joint effort with Canada to conduct seismic work with the goal to measure sediment thickness.

"We're mapping the Chukchi Cap," said expedition chief Larry Mayer, who heads up the Center for Coastal and Ocean Mapping at the University of New Hampshire. "It's an area that potentially qualifies very well under the U.N. Convention of the Law of the Sea Article

76 for natural prolongation and extension of the continental shelf.

"The fundamental criteria is you have to have a feature that is a natural prolongation from your territory – and you can demonstrate morphological continuity and perhaps geological continuity," Mayer said. "Then you can extend your continental shelf."

Mayer noted the treaty defines two ways to do this:

- ✓ Find the foot of the slope – the definition provided for foot of slope is murky, he said, but it's a place where there's a maximum change in curvature – and you can go out from there 60 nautical miles.

- ✓ Go to a place where the sediment thickness is 1 percent of the distance back to the foot of the slope.

"In the case of the Arctic," Mayer said,

"the sediment is so thick in the Arctic Basin that the 1 percent of the distance back to the foot of the slope will be way beyond the North Pole for every country.

"The treaty also says there are limits to how far you can go," he added, noting that the limits are:

- ✓ No further than 350 nautical miles from your coastline.

- ✓ 100 nautical miles from the position of the 2,500-meter depth contour.

"In the northern Chukchi, the 2,500-meter contour plus 100 nautical miles is much further than the 350-nautical-mile line," Mayer said. "So, on the Chukchi you can go way beyond 350 nautical miles.

"The treaty takes all the ambiguity of law and mixes it with the ambiguity of geology," he said. "The result is all these ambiguous terms – for example, what does the 'foot of the slope' really mean?"

"It uses all these geological terms and mixes them with legal terms – none of which has a clear cut definition."

Mapping Challenges

Some of the scientific experts predict the Arctic could be ice-free by 2040. For now, however there's plenty of the frozen stuff to pose a challenge for the mapping expeditions.

"The area is mostly covered by ice even in the summer," Mayer said, "so you have to take an icebreaker in to map. We map with a multi-beam echo sounder, which is a huge million dollar thing mounted on the hull of the ship.

"It uses sound, and breaking ice is a noisy process," Mayer said. "So it's almost an incompatible task of breaking ice, which makes noise, and trying to listen for sound coming back at the same time.

"Last year there was less ice, which let us map further north," Mayer said. "We found evidence for the foot of the slope further north than we thought originally.

"This has real ramifications for a U.S. claim, because everything is kind of based on where the foot of the slope is."

Working in this challenging environment tends to be frustrating, expensive and time consuming. Consequently, there's much incentive for the coastal states to work together and cooperate, according to Macnab.

Where science is concerned, it is noteworthy that there's no sense of competition in this tedious coastal extension effort, according to Mayer.

"From a scientific perspective, it's been a very cooperative effort," he said.

"There's only one shape of the seafloor and only one sediment thickness, and it's up to us to determine what it is and then let the diplomats and the lawyers divvy up the boundary issue. The science is separate.

"The Law of the Sea Treaty provides a wonderful rule of law for all this to happen in a nice and peaceful way."

Worth the Effort?

Even so, there are frustrations – particularly on the part of Russia, Canada and Denmark. All three countries assert the extensive subsea Lomonosov Ridge is a natural prolongation of their territories.

The Russians say they can lay claim to the Ridge as far, if not further, than the North Pole, Mayer noted.

Not so, say the Canadians and Danes, who have been working to establish that the feature is a natural prolongation of the combined Canadian and Greenland margin, according to Macnab.

"If that's the case, they can meet the Russians halfway," Mayer said, "and this becomes a boundary negotiation as opposed to a geologic discussion."

Macnab concurred.

"If you look at the information on hand and apply the provisions of Article 76," he said, "it makes sense that Russia would move along the Lomonosov Ridge from its direction, and Canada and Denmark would move to meet them somewhere in the middle."

As for the potential prize of vast hydrocarbon finds in the region, Macnab takes a skeptic's viewpoint.

"In the central part of the Arctic Ocean, not enough work has been done to determine if any oil is there and, if so, how much there is," he said. "Most of the oil in the Arctic Ocean already located is on the continental shelf within the jurisdiction of the coastal states."

This essentially is in line with the recent USGS assessment of undiscovered oil and gas in the Arctic Circle, which suggests most of the undiscovered resources likely are not under the North Pole but closer to shore (see related story, page 22).

"There may be oil," Macnab said, "but the price would have to go further through the roof than now for it to become worthwhile." □

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NAPE prospect hopes to 'Tally' success

'Victoria's Secret' Has a History

By LOUISE S. DURHAM
EXPLORER Correspondent

Intriguing names for individual prospects and entire fields are fairly common in the oil patch.

Think Thunder Horse, Gotcha, Ringo, Pony, Bullwinkle ...

But as names go, it's hard to top Victoria's Secret.

Got your attention, right?

Relax. The name is a reference to Victoria County, Texas – but the moniker no doubt helped lure a number of the Summer NAPE 2008 viewers who clustered around the Brayton Operating Corp. booth at Houston's George R. Brown Convention Center, where the prospect was on display.

Officially dubbed the Tally Prospect, this is one of the now-familiar examples of the potential big finds lurking in places that have been subjected to long-ago drilling that failed to pan out as the operators envisioned.

Today, readily available sophisticated seismic technology, hi-tech fracturing techniques and other advances can be real game changers when picking over these old areas, often laying bare the secrets that prevented earlier successes.

The Tally story began late in 1963, when Amerada spudded the R.F. Tally #1 well, which was an ultra deep Wilcox test, according to AAPG member David Desenberg, president of the Corpus Christi, Texas-based Brayton.

"The well was designed to test an extremely large faulted, four-way Wilcox closure," Desenberg said.

"The test was predicated on early 2-D data, perhaps 100 percent, and probably a

very substantial gravity anomaly, which combined to suggest the very large structure."

First Steps

To begin, the Tally well encountered thick sections of Wilcox sands on its way to total depth of 23,885 feet. A logging run revealed a series of well-developed Upper Wilcox sands.

Cores and additional logs were evaluated, and three successful formation tests confirmed the interval from about 14,100 feet to 14,600 feet likely would produce gas/condensate.

After reaching total depth in 1964, the company elected to plug back to the Upper Wilcox "pay sands."

When the company perforated the lower portion of the apparent pay section (14,370-foot sand), the well flowed dry gas at a rate of 9,000 Mcfg/d – likely convincing Amerada that it had a significant discovery.

But disaster was nigh once the company seemingly determined that the well was tight and required some form of stimulation.

"The well stimulation business was in its infancy in 1964, so options were limited," Desenberg said. "Amerada chose a form of acid fracturing, apparently without regard to the clay content of the Wilcox – today, it's generally known that acid tends to destroy permeability in Wilcox sands by swelling the



Photo courtesy of Brayton Operating Corp.

clays, so it's avoided."

"Apparently the acid inhibited the permeability of the completion," Desenberg noted, "and flow rates and pressures probably dropped dramatically with the introduction of the acid, creating tremendous differential pressure at the perforations."

it's reported that the casing collapsed opposite the perforations," he said.

Alas, the best portion of the productive interval was lost. A shallower part of the Wilcox section was then sand-fraced and flowed gas, but the non-commercial well was soon plugged and abandoned.

Try, Try Again

In 1980, an Amerada team twinned the R.F. Tally #1, drilling 250 feet northeast of the original well. Armed only with 2-D seismic data and one log for correlation, they failed to find the 14,370-foot sand that caused the collapse in the initial well.

Today, 3-D data and correlations show the second well faulted out the target Wilcox sand, as the geologists had inadvertently moved the well toward the fault given their sparse database.

In January 2000, a partnership that included Brayton drilled the Koehl #1 about one mile northeast of the Amerada wells

using 3-D seismic acquired by Brayton that confirmed the suspected large deep-seated Wilcox structure. The well encountered gas-bearing Upper Wilcox sands, but Desenberg noted the hole ultimately was plugged and abandoned – following considerable head-scratching among the partners.

Undaunted, Brayton has since re-processed the 3-D data and revisited the Tally structure, convinced that "a terrific prospect remained," according to Desenberg.

Helping to bolster this opinion is a similar "re-discovery" field about 30 miles northeast of the Tally Prospect, where Tri-C Resources successfully offset an old Conoco discovery drilled in 1986. Since the "re-discovery" in 2005 in the former one-well Brushy Creek field, the field has been actively developed, producing over 32 Bcfg and 580,000 barrels of condensate thus far.

On the Tally structure, Brayton is going full speed ahead with plans to offset Amerada's original apparent major discovery, the R.F. Tally #1.

The planned well is slated to kick off late this year or in 2009's first quarter.

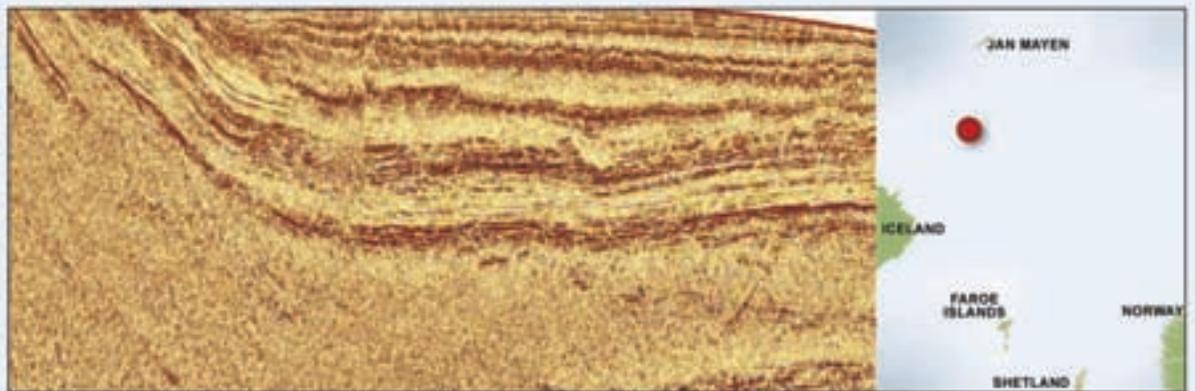
Desenberg emphasized that fracture stimulation technology has greatly improved since the completion of the previous Tally wells, noting they won't be using acid owing to the specific clay content in the Wilcox sands.

Guarantees are essentially non-existent in this business, but if all goes according to plan, the company is eyeing total prospect reserves in the range of 206 Bcf of natural gas plus liquids, Desenberg noted, with as many as 10 wells expected to go down. □

Iceland - another saga to be told...

Born as a result of a complex tectonic relationship, Iceland inherited rather varied and dynamic character from its parents – The Eurasian & North American plates... Millions years ago Jan Mayen Ridge was part of Greenland sharing the same sedimentary basin, where source rock has been found and oil is known to have been generated ..."

The story continues at
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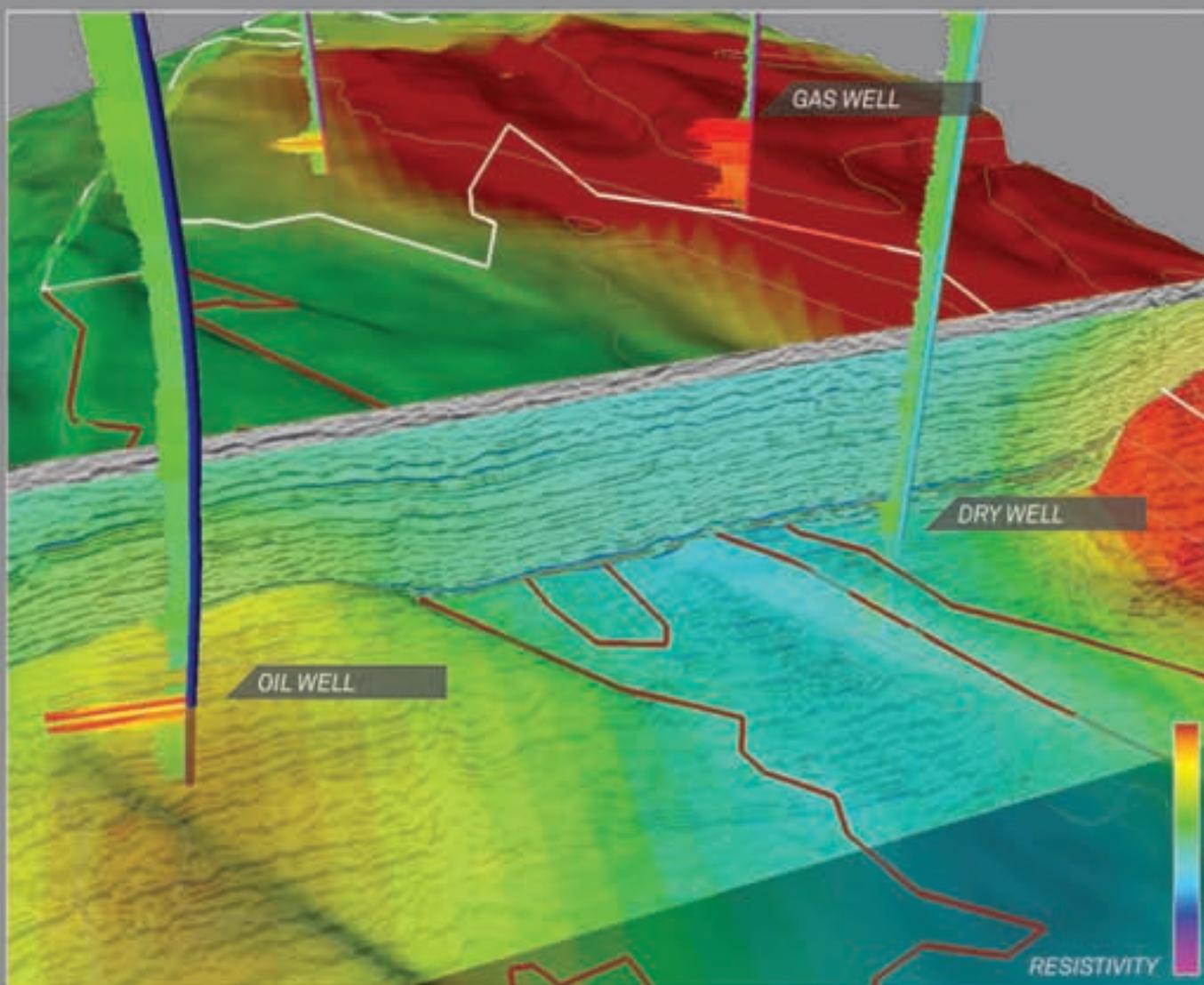
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The final image shows gas and oil provinces - and an existing dry well.

To discover more, email clearplay@emgs.com or visit our website.



Data courtesy of StatoilHydro



*Patience, appetite for risk required***Independents Find Africa Success**

Ian Cloke, Uganda exploration manager at Tullow South Africa Ltd., will present a paper at the upcoming AAPG International Conference and Exhibition on "African Opportunities Past, Present and Future: An Independent Oil Company's Perspective."

Cloke's paper will be presented at 9:20 a.m. Monday, Oct. 27, as the final talk in a four-paper plenary session titled "African Energy, Global Impact."

Other talks in the session are:

- ✓ "Evolution of the Margins Around Continental Break Up: Insights From the South Atlantic Margin."
- ✓ "Interplay of Basement Tectonics, Salt Tectonics and Sedimentation in the Kwanza Basin, Angola."
- ✓ "Learning by the Bit: Fifteen Years of West Africa Deepwater Exploration, Development and Production."

By LOUISE S. DURHAM

EXPLORER Correspondent

When it comes to international E&P action, Africa is a Big Deal these days.

In fact, a third of the world's hydrocarbon discoveries since 2000 have occurred in Africa, according to Ian Cloke, Uganda exploration manager at Tullow South Africa (Pty) Ltd. in Cape Town, South Africa.

And perhaps a bit surprising, the companies involved in the Big Deal are not always the Big Majors.

Can you say "independents?"

"Hydrocarbon exploration in Africa dates back to the earliest part of the 20th century, when field geologists mapped the continent and identified numerous oil seeps indicating working hydrocarbon systems," Cloke said.

"The first major oil and gas discoveries



Photo courtesy of Kosmos Energy

Dallas-based Kosmos Energy, operator of the Songa Saturn DST Mah-2 (above), is just one of many independents finding success in Africa.

were made onshore in the mid-1950s in Algeria and Libya," he noted. "Contemporaneously, oil was discovered onshore in Nigeria, Gabon, Congo, Cameroon and Angola, opening several new play fairways."

The oil crisis of the 1970s in combo with technology advancements in exploration kicked off the next phase of exploratory activity.

The remote location of some of the resulting discoveries in places such as Chad, Ethiopia, Sudan and others caused them to be stranded until they could be connected to export routes via pipelines.

The following exploration phase commenced in the mid-1990s when improved drilling technology enabled the operators to go after prospects in water depths exceeding 300 meters.

"This phase continues through to the present day," Cloke said. "The combination of excellent quality 3-D seismic data and AVO has resulted in success rates in excess of 50 percent as discoveries were made in the Miocene and Oligocene-age deepwater confined channel systems of Mauritania, Nigeria, Equatorial Guinea, Angola and the Nile Delta of Egypt.

"Onshore exploration continued apace



close to export pipelines and in frontier areas such as Uganda," Cloke added, noting that major oil companies dominated this period of activity early on.

Just Do It

It's a different scene today.

Independents are seemingly all over the place, often successfully playing areas previously rejected by the major companies.

This was the case with the 2007 discovery of the huge Jubilee Field (nee Mahogany) in Cretaceous-age turbidites in Ghana.

The principal partners at Jubilee are Tullow, Kosmos Energy and Anadarko, with Sabre Oil & Gas and the EO Group also participating. Kosmos was the operator on the Mahogany #1 discovery well.

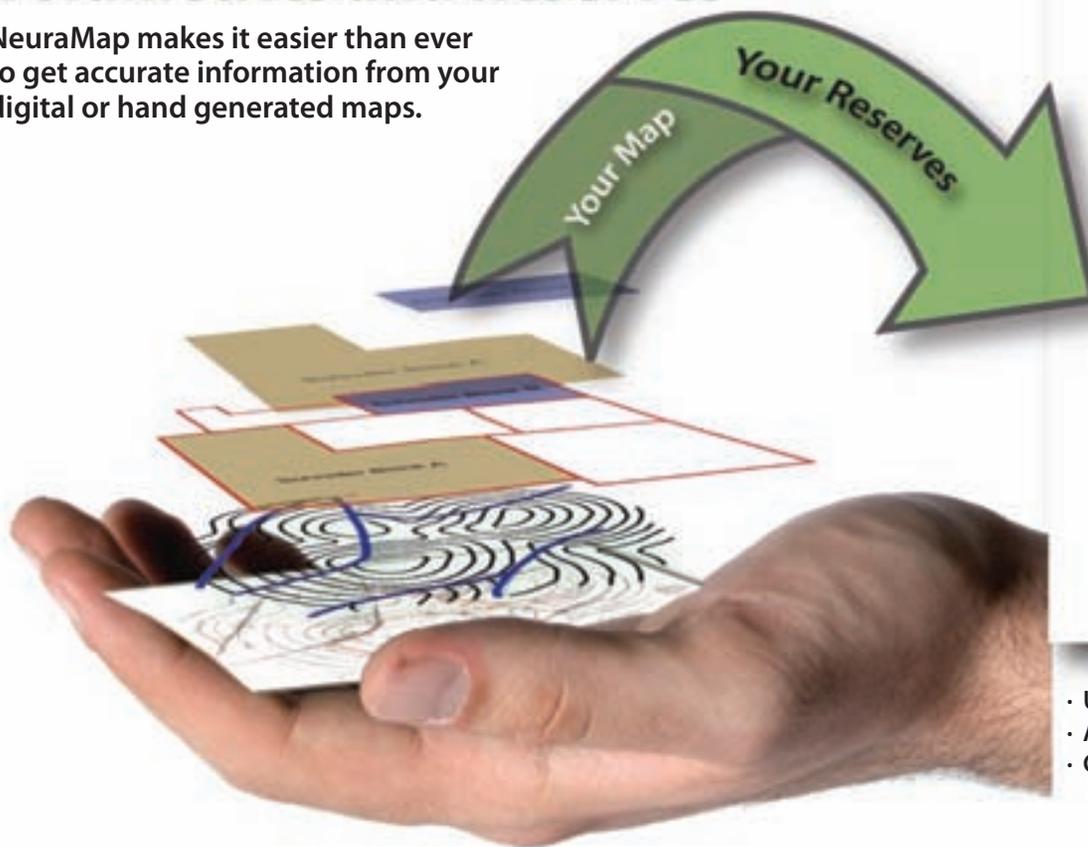
"The trend we found at Jubilee last year, all the big companies had rejected it, saying it's too risky, no source rock," Cloke said. "We put it together and just went after it."

The payoff could be huge given that

See **Independents**, page 30

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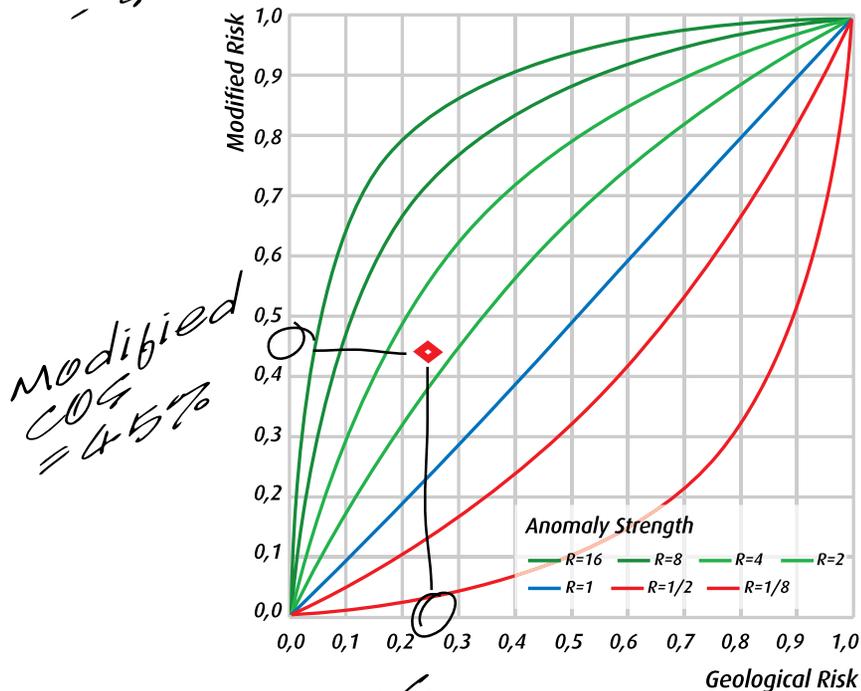
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Cape Town Ready To Host AAPG ICE

AAPG's spotlight turns to South Africa this month for a historic conference that boasts a premiere technical program that focuses on the top topics of today's industry.



The AAPG International Conference and Exhibition will be held Oct. 26-29 at the Cape Town International Convention Centre – the Association's first ICE ever in South Africa.

The theme is "African Energy, Global Impact," and organizers have worked for more than two years compiling a technical program that not only offers the latest in African geology and exploration but also a variety of sessions dealing with cutting edge technology and science from around the world.

"While there is a large part of the technical program that uses examples from the African oil and gas experience to bring lessons of global importance, this conference also looks at the larger issues of worldwide energy resources, the technology employed to image and extract them, the people it takes to successfully commercialize those reserves and how to minimize the impact on the environment in the process," said Siphon Mkhize, conference general chair.

That program also includes a large number of short courses, special forums, featured luncheon speakers and geological trips showcasing the best of African geology.

In keeping with the South Africa theme, this year's 70-plus technical sessions are built around "the big five" symbols of Africa's animal kingdom.

Those themes are:

✓ The Elephant – "Deepwater: Ancient Analogues, Current Technologies, Future

Opportunities."

✓ The Leopard – "Advances in Geoscience and Allied Disciplines."

✓ The Black Rhino – "Next Generation Tools and Technologies."

✓ The Lion King – "The New Business of Energy."

✓ Cape Buffalo – "Gondwana and Pangean Petroleum Systems: Exploration, Development and Production – Emerging Plays, Lessons and Analogs."

In addition, the Cape Town program offers:

✓ A colorful and exciting opening session, featuring a live performance of music from South Africa, a talk from Buyelwa Sonjica, the minister of Minerals and Energy for South Africa, and a keynote address by Duncan Clarke, chairman and CEO of Global Pacific & Partners.

✓ A plenary session dealing with African energy.

✓ Four special forums dealing with the Lusi mud volcano; global climate change (from an African perspective); the role of small and independent companies in Africa's future; and the geosciences work force of the future.

✓ An African deepwater core poster session.

✓ A featured speaker luncheon offering the talk "The Four-Billion-Year Existence of Life – Africa's Role in Understanding This Remarkable Story," given by Bruce Rubidge (see related story, page 38).

✓ The AAPG Distinguished Lecturer Luncheon, featuring Lynn N. Hughes, speaking on "Dilemmas in Trust."

Complete information can be found online at www.aapg.org/capetown/. □

Independents

from page 28

recoverable resources in the Jubilee Field are estimated to be more than 500 MMbo, with the ultimate upside pegged at perhaps 1.8 billion barrels.

When exploring this part of the world patience truly is a virtue – and it's a luxury better afforded by the independents than the Big Guys.

Cloke emphasized it's not unusual for negotiations to drag on for maybe five years or even longer before a project gets drilled.

Besides the need to be patient, one must be nimble as well.

The Jubilee discovery in greater than 1,500 meters of water had to be appraised within two months. Yet the participants were told there was a three-year wait for a rig.

"We went out and got a rig, just like that," Cloke said. "That's the ability of the independents to move quickly."

"You must be patient working here, but at the same time if things start moving fast, you've got to move – you've got to be able to sign the deal tomorrow," he said. "You can't take umpteen months to review a deal when it comes up."

It appears likely there's a raft of future deals just waiting to happen.

"We've barely scratched the surface of the continent, which is pretty well unmapped," Cloke said. "If you just look at the areas rejected by major companies, there are incredible opportunities."

AAPG member Brian Maxted, chief operating officer at Dallas-based Kosmos Energy, agrees.

"Unless the majors change their risk



Maxted

appetite, Africa will be the domain of small and mid-size independents who most of Africa will depend on for establishing new petroleum provinces," Maxted said.

"We believe Ghana will be a multi-billion barrel petroleum province," he continued, "and we believe others are waiting

to be found, just requiring the technology skills and risk appetite.

"By definition, the plays we're dealing with are high risk in the sense the source rocks as well as the reservoir rocks are not always understood and the traps tend to be subtle – not large structures, most of which have been drilled-out in Africa," he said.

"They're more stratigraphic plays and combination structural/stratigraphic plays, and Ghana is an example of that."

Maxted, the Michel T. Halbouty Lecturer for the 2004 AAPG Annual Convention in Dallas, emphasized that it's the limited understanding of source and reservoirs and the focus on high-risk traps that makes these areas less attractive to the majors looking for simple large prospects in proven areas that are few and far between.

They're expensive to access and declining in numbers as places such as Angola and Nigeria begin to get drilled up.

Kosmos has an intense focus on West Africa, where it's deliberately pursuing subtle stratigraphic/structural traps in the Upper Cretaceous and early Tertiary.

"That's where we believe in West Africa most of the remaining potential lies to be found outside of the proven areas," Maxted said. □



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- *Petroleum occurrence and play analysis*
- *Global leads & prospects*
- *Global portfolio of play schematics*

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- *3D exploration*
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Downey Named Powers Medalist

By SUSIE MOORE
EXPLORER Staff Writer

Marlan W. Downey, who had led two major international oil companies, served as an administrator and professor in academe and is an AAPG past president, has been named the recipient of the Sidney Powers Award, the Association's highest honor.

Downey had a 30-year career with Shell Oil in management and research, retiring as president of Pecten (Shell) International in 1987. After a brief retirement, during which he founded Roxanna Oil, he joined Atlantic Richfield and served for seven years as president of Arco International.

After retiring from Arco in 1996, he became Bartell Professor of Geoscience at the University of Oklahoma, and chief scientist at the Sarkeys Energy Center. He stepped down in 2002 and remains CEO of Roxanna.

He was awarded AAPG Honorary Membership in 2007 and was the recipient of the Robert H. Dott Sr. Memorial Award in 2003 and served as AAPG president in 2000-01.

Downey also is an AAPG Foundation Trustee Associate as well as Member of the Foundation Corporation and has been honored as "A Living Legend in the Oil and Gas Business" by the Houston Geological Society.

Joining him at the top of the awardees list is M. Ray Thomasson, with Thomasson Partner Associates in Denver and a past AAPG president, who is this year's recipient of the Michel T. Halbouty Outstanding Leadership Award.



Downey



Thomasson

AAPG awards, nominated by the Advisory Council and approved by the Executive Committee, are presented annually to recognize individuals for service to the profession, the science, the Association and the public.

Downey and his fellow honorees will be recognized at the opening session of the 2009 AAPG Annual Convention, which will be held June 7-10 in Denver.

Interviews with Downey and Thomasson will be published in a future EXPLORER, and biographies and citations of all award winners will be included in a future BULLETIN.

Those award winners approved by the Executive Committee and who will be honored along with Downey and Thomasson in Denver are:

Honorary Member Award

Presented to members who have distinguished themselves by their accomplishments and through their service to the profession of petroleum geology and to AAPG.

□ Elizabeth B. Campen, Campen Consultants, Billings, Mont.

□ John G. Kaldi, Australian School of Petroleum, Adelaide, Australia.

□ J. Michael Party, Wagner & Brown, Midland, Texas.

□ Peter A. Ziegler, Petroleum Exploration Consulting Services, Binningen, Switzerland.

Outstanding Explorer Award

Presented to members in recognition of distinguished and outstanding achievement in exploration for petroleum or mineral resources, with an intended emphasis on recent discovery.

□ Michael S. Johnson, consultant, Denver, honored for his achievement in originating the concept that led to the Parshall Field discovery in North Dakota – and opening the current much publicized and highly successful Bakken Shale play.

Robert R. Berg**Outstanding Research Award**

AAPG's newest award, presented to honor a singular achievement in petroleum geoscience research.

□ Bradford E. Prather, Shell International, Houston, honored for his work in deepwater siliciclastic systems, furthering our understanding of slope and base of slope systems.

Distinguished Service Award

Presented to those who have distinguished themselves in singular and beneficial long-term service to AAPG.

□ Alistair R. Brown, consultant, Allen, Texas.

□ Larry L. Jones, Spartan Petroleum,

Houston.

□ Mike J. Lakin, Envoi, London, England.

□ Dalton F. Lockman, Plains Exploration & Production, Bakersfield, Calif.

□ Kenneth M. Mallon, consultant, Houston.

□ Randi S. Martinsen, University of Wyoming, Laramie, Wyo.

□ Robert C. Mummery, Almandine Resources, Calgary, Canada.

□ John E. Ritter, Occidental Petroleum, Houston.

□ Stephen L. Shaw, Firstview Resources, Midland, Texas.

□ Jack H. West, consultant, Bakersfield, Calif.

Grover E. Murray Distinguished Educator Award

Presented for distinguished and outstanding contributions to geological education, both at the university level and toward education of the general public.

□ J. Frederick Read, Virginia Polytechnic Institute, Blacksburg, Va.

□ Finn Surlyk, University of Copenhagen, Copenhagen, Denmark.

Special Award

Presented to individuals and organizations whose area of work may not qualify for one of the existing awards, but is worthy of Association recognition.

□ Alexei E. Kontorovich, Institute of Petroleum Geology and Geophysics,

See Awards, page 34



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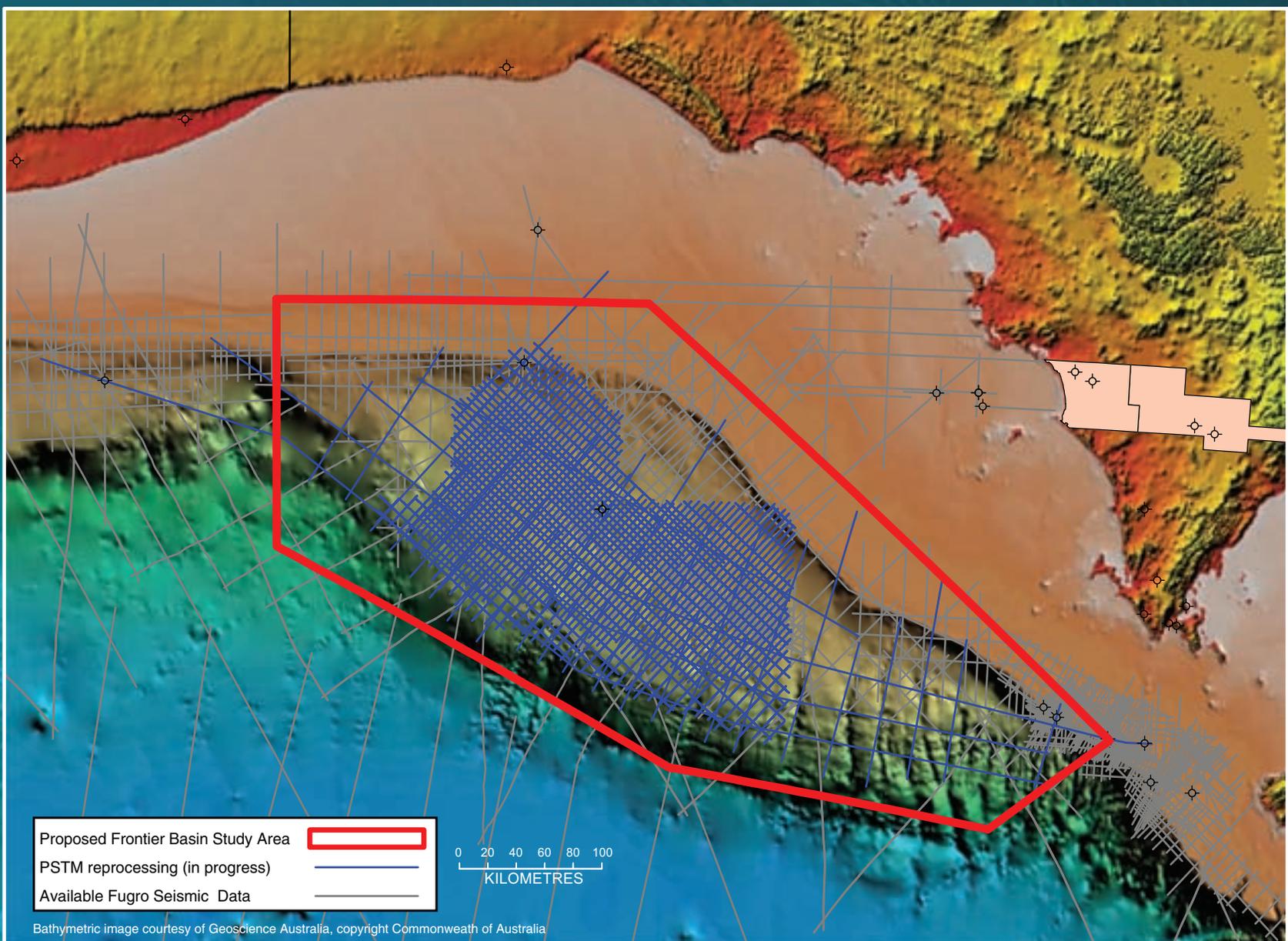
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The Great Australian Bight is likely to be included in the Australian Government's 2009 acreage release, to be announced in April 2009. Geoscience Australia have recently published results from a geological sampling study, with promising evidence for a world class Cretaceous source rock in the Bight Basin.

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Denver Call for Papers

Time is running out on the call for papers for the next AAPG Annual Convention and Exhibition, which will be held June 7-10 in Denver.

This year's theme is "Image the Past – Imagine the Future."

The deadline for submitting abstracts is Nov. 4. Abstracts can be submitted online.

Organizers are seeking papers that fit into 15 general topics:

- ✓ Global Deepwater E&P.
- ✓ Hydrocarbon Systems and Basin Analysis (seven sessions).
- ✓ Siliciclastic Systems.
- ✓ Carbonate Systems.
- ✓ Structural Geology.
- ✓ Exploration and New Plays.

- ✓ Resource Development and Reservoir Characterization.
- ✓ Tight Gas.
- ✓ Unconventional Reservoirs.
- ✓ Astrogeology.
- ✓ Alternative and Renewable Energy.
- ✓ Petroleum Geology and Public Policy.
- ✓ Responsible Development, Sustainability, Climate Science.
- ✓ Geologic Interpretation Case Histories of Geophysical Data.
- ✓ Student Sessions (AAPG and SEPM).

For more information on the technical program and the meeting in general go online to www.aapg.org/denver.

Don't miss the Nov. 4 deadline. □

Awards from page 32

Novosibirsk, Russia. One of the most influential, honored and recognized geologists living in Russia, Kontorovich has had a profound impact on the mapping and assessment of oil and gas reserves in most Russian basins.

□ Akif Ali Narimanov, Baku, Azerbaijan.

Public Service Award

Presented to recognize contributions of AAPG members to public affairs – and intended to encourage such activities.

□ Owen R. Hopkins, Suemar Exploration, Corpus Christi, Texas, for promoting geosciences in the public and at schools, including his efforts to have a U.S. Geological Survey Time and

Terrain Map of the United States mounted prominently in south Texas schools.

Pioneer Award

Presented to long-standing members who have contributed to the Association and who have made meaningful contributions to the science of geology.

□ James D. Lowell, consultant, Denver. A 52-year member of AAPG, Lowell has specialized as an expert in structural geology on domestic and international projects that include the North Sea, South America, Southeast Asia, Trinidad, Somalia, the Middle East, Europe and Alaska.

Wallace E. Pratt Memorial Award

Presented to honor and reward the author(s) of the best AAPG BULLETIN article published each calendar year.

□ Joe Cartwright, Mads Huuse and Andrew Aplin, for "Seal Bypass Systems," which appeared in the August 2007 BULLETIN. Cartwright and Huuse are with 3DLab, School of Earth, Ocean and Planetary Sciences, Cardiff University, Cardiff, United Kingdom, and Aplin is with NRG, School of Civil Engineering and Geosciences, University of Newcastle, Newcastle-Upon-Tyne, United Kingdom.

Robert H. Dott Sr. Memorial Award

Presented to honor and reward the author/editor of the best special publication dealing with geology published by the Association.

□ Tor H. Nilsen, Roger D. Shew, Gary S. Steffens and Joseph R.J. Studlick, for Studies 56, *Atlas of Deepwater Outcrops*. The late Tor Nilsen was a consultant, former U.S. Geological Survey geologist and a legendary instructor for AAPG; Shew is with the University of North Carolina at Wilmington and consulting geologist, Wilmington, N.C.; Steffens is with Shell International E&P Inc., Houston; and Studlick is with Maersk Oil America Inc., Houston.

J.C. "Cam" Sproule Memorial Award

Presented to recognize and reward younger authors of papers applicable to petroleum geology.

□ David R. Pyles, for the paper "Multiscale Stratigraphic Analysis of a Structurally Confined Submarine Fan: Carboniferous Ross Sandstone, Ireland." Pyles is with the Chevron Center of Research Excellence, Department of Geology and Geological Engineering, Colorado School of Mines, Golden, Colo.

George C. Matson Award

Presented to honor and reward the best oral presentation at the AAPG Annual Convention in San Antonio.

□ Mark Knackstedt, for the paper "Carbonate Petrophysical Parameters Derived from 3-D Images." Knackstedt is with the Australian National University, Canberra, Australia.

Knackstedt's co-authors are Mahyar Madadi, Christoph Arns, Gregor Baechle and Gregor Eberli. The paper was part of the session on "New Directions in Carbonate Reservoir Characterization."

Jules Braunstein Memorial Award

Presented to honor and reward the best poster presentation at the 2008 AAPG Annual Convention in San Antonio.

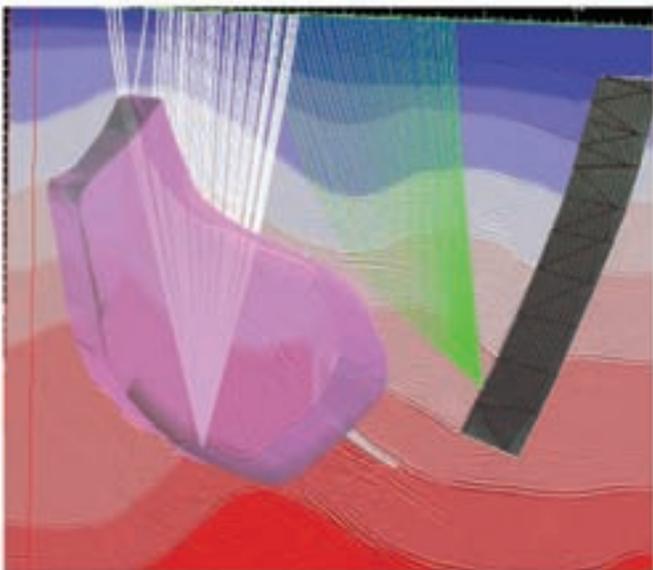
□ Tim Dooley, Michael Hudec and Martin Jackson, for the poster "Dismembered Sutures Formed During Asymmetric Salt-Sheet Collision." All are with Jackson School of Geosciences at the University of Texas at Austin. □

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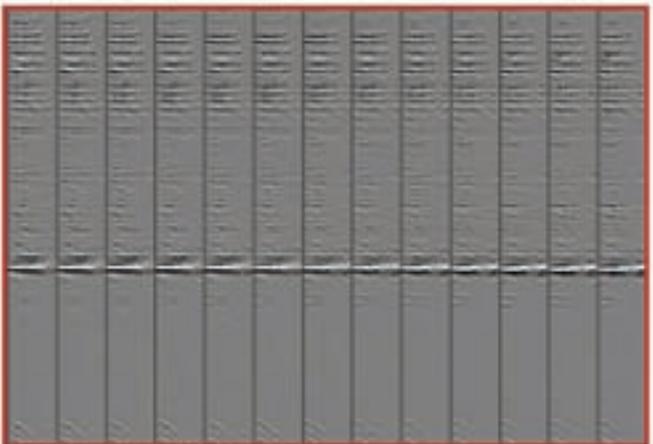
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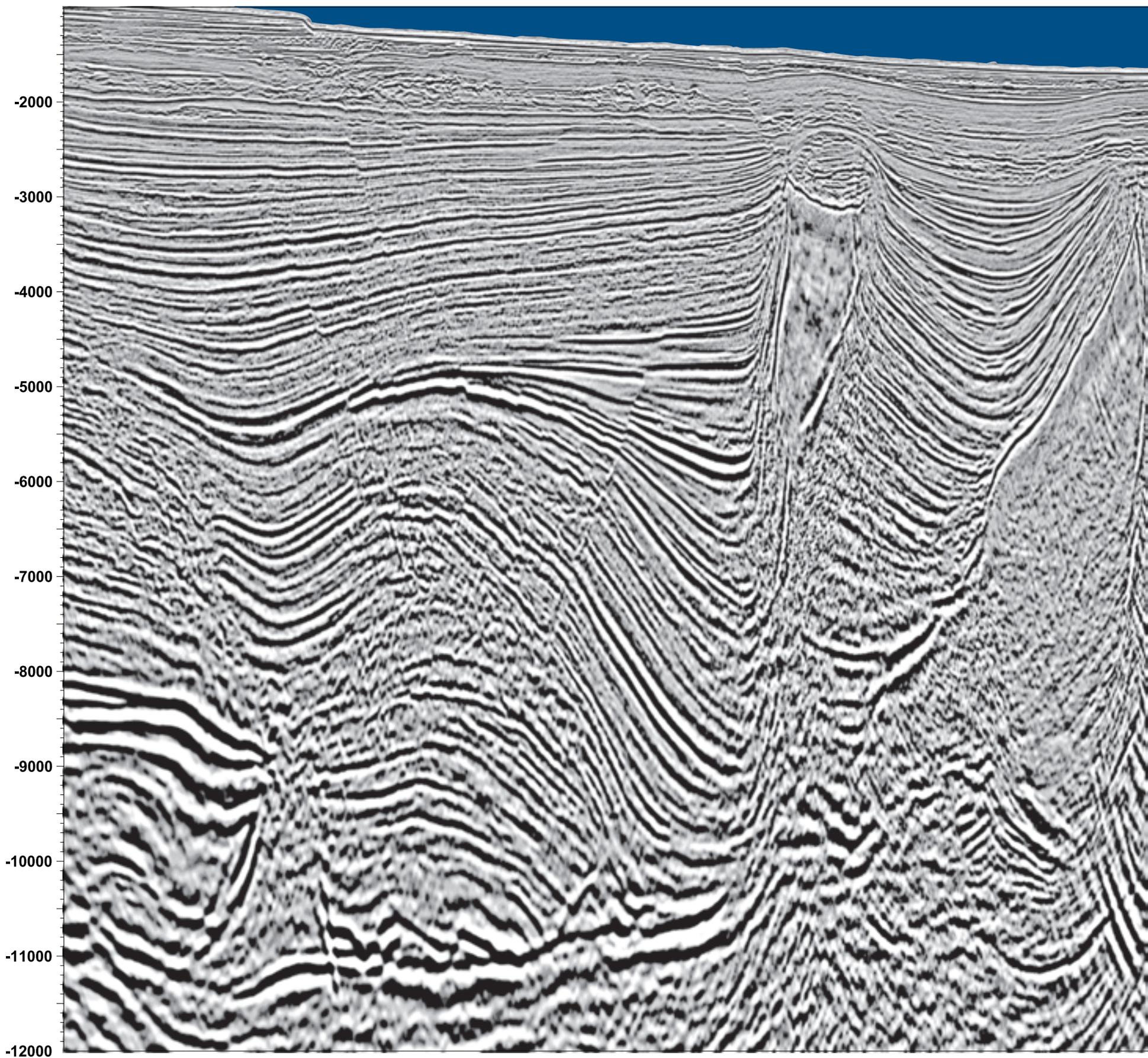
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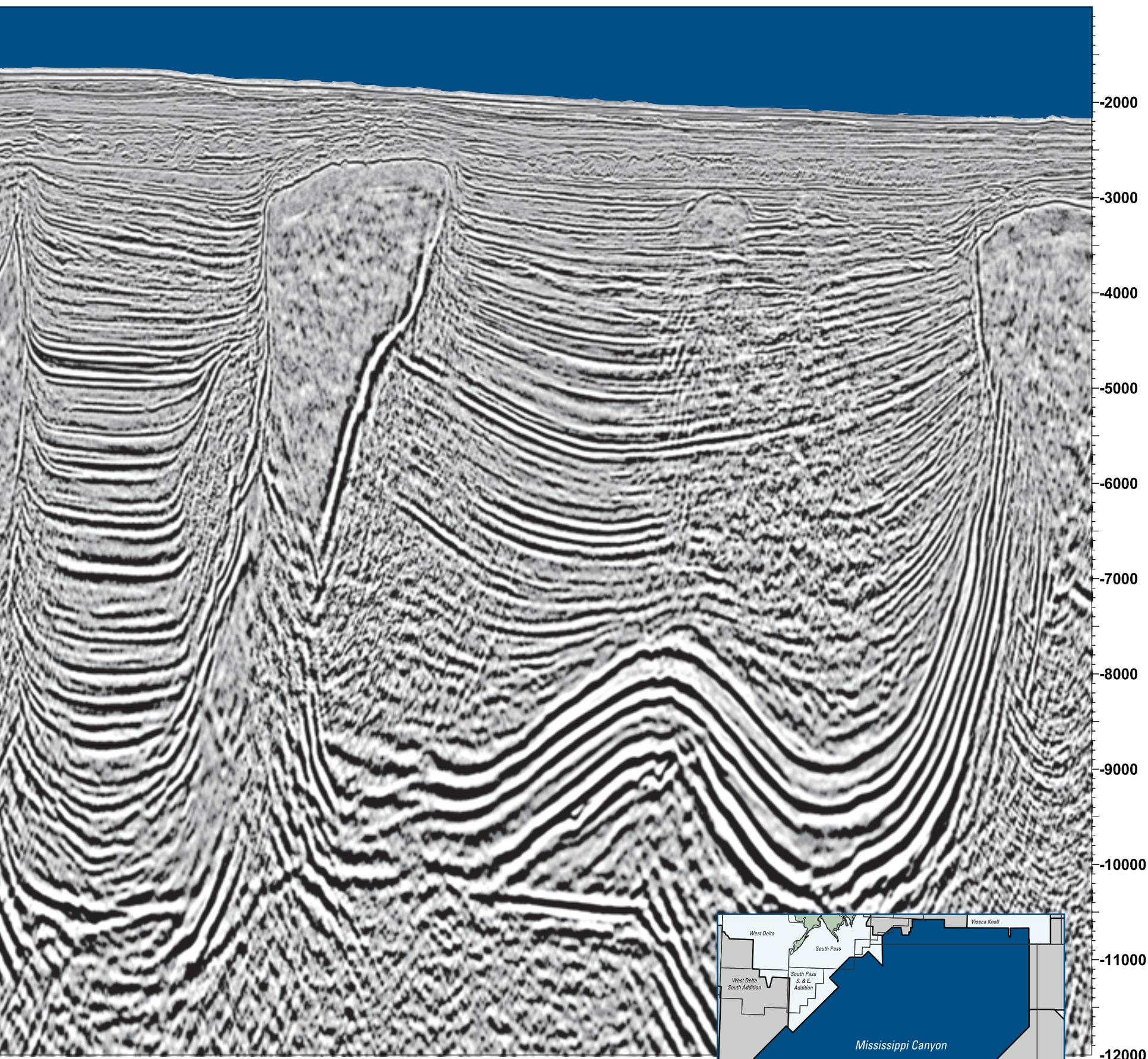


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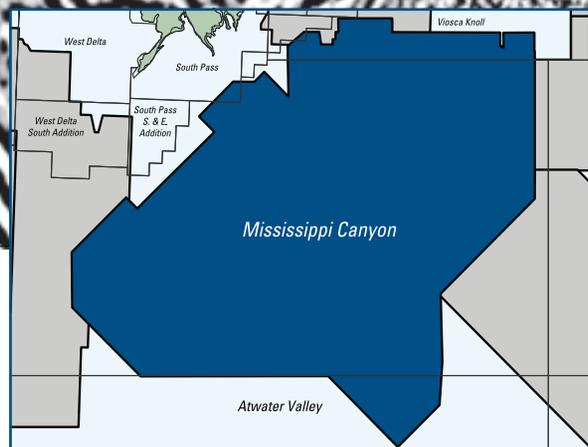


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Humans only part of the story

Africa Ideal to Study Life Origins

By BARRY FRIEDMAN
EXPLORER Correspondent

Professor Bruce Rubidge, a man who often thinks about time in terms of eons rather than 24-hour news cycles, has a problem: He needs to discuss the 4.6-billion-year history of the origins of earth and life – and he has to do it over lunch.

"Yes, I have 25 minutes," he says, laughing about preparing for his luncheon talk at the upcoming AAPG International Conference and Exhibition in Cape Town.

His talk is called "The Four-Billion-Year Existence of Life – Africa's Role in Understanding This Remarkable Story," and Rubidge says he already can feel your eyes glazing over.

Don't worry.

"One cannot get too serious in a time like this – people will want something light-hearted and fun."

Obviously, he'll have to skim over a few billion years or so – but that shouldn't be a problem for Rubidge.

"I will try to present a very brief and interesting overview, do the history of life from a Southern African perspective, look at some of the exciting new fossil discoveries from Africa, and concentrate on important evolutionary and biodiversity issues in the ongoing development of life," he said.

Rubidge, who along with Terence McCarthy, professor of mineral geochemistry at Witwatersrand, co-wrote *The Story of Earth and Life, a Southern African Perspective on a 4.6-Billion-Year Journey*, believes that one cannot fully understand the earth's pedigree without first understanding the contribution of



Rubidge

Bruce Rubidge will present his talk, "The Four-Billion-Year Existence of Life – Africa's Role in Understanding This Remarkable Story," at this year's Featured Speaker Luncheon at the AAPG International Conference and Exhibition in Cape Town.

The luncheon is set for Monday, Oct. 27, at the Cape Town International Convention Centre.

Rubidge is a professor with the Bernard Price Institute for Palaeontological Research at the University of the Witwatersrand in Johannesburg, South Africa.

Information can be found online at www.aapg.org/capetown/luncheons.cfm.

Africa's role, generally, and South Africa's role, specifically.

"From our very ancient fossil record it is well known that Africa is the place of origin of humans," Rubidge says, "and much of this story of human origins is based on three-million-year-old or younger fossils discovered in South Africa by noted paleontologists such as Robert Broom, Raymond Dart, Phillip Tobias and Bob Brain."

The Perfect Setting

But Rubidge says that's just one aspect of the story.

"While the human story is one which tends to make the headlines, it is only a very small part of the development of life on earth," he said. "Because South Africa has a geological history that extends back 3,600 million years, and has younger rocks of all different ages that bear fossils, it is an ideal country to study the development of life.

"In particular," he added, "the rocks of the Karoo Supergroup, which cover more

than two thirds of the total surface area of South Africa, preserve a remarkable history of the origin and diversification of various reptile groups (including mammals, dinosaurs and turtles) from 180-300 million years ago."

More fascinating to Rubidge is that South Africa is "... the only single country which records such an extended history of 'reptile' diversification." Specifically, he notes how the Karoo Region is noted for its rich record of therapsids, the most distant ancestors of mammals and ultimately, humans.

"South Africa has the most primitive therapsids – and then through the Karoo succession there are progressively more advanced forms – with mammals in the youngest rocks on top," he said. "By traveling through the Karoo and viewing its fossils one can thus trace the ancestry of mammals."

A Love For Rocks

Rubidge grew up on a farm in the town of Graaff-Reinet, which is situated in the

Karoo. He credits much of his enthusiasm and passion for this study to his grandfather.

"My grandfather (Sidney Rubidge), who was a keen observer of nature, developed a great interest in fossils that resulted in him amassing a large collection of fossil 'reptiles' collected from the rocks in the vicinity of his farm during the 1930s," he said.

Calling his co-author, McCarthy, "the most versatile and knowledgeable geologist I know, who always seems to know everything," Rubidge says the book was written for a simple reason: the two simply love rocks.

"He and I shared a passion to write a story on the remarkably diverse South African rock and fossil record which would have appeal to a general readership."

Saying that while bookstores in South Africa had offerings on insects, birds, reptiles and plants, "there was nothing on geology."

"We set out to write a book that people could take in their car on journeys around the country, which they could read at night while in bed, but which would also be useful for university undergraduate earth and life-science courses."

And apparently for anyone with a few minutes to spare during lunch. □

To read more about this subject, visit the AAPG Web site.



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Cape Town Plans to 'Give Back'

By VERN STEFANIC
EXPLORER Managing Editor

To many, attending a conference is mainly a chance to learn, to network, to experience new cultures, to grow as a professional.

In Cape Town, attending a conference won't be just about you.

Organizers of the upcoming AAPG International Conference and Exhibition are including an ambitious "Social Responsibility" program that reflects AAPG's "strong commitment to social responsibility, both globally and in South Africa."

Through the initiative, various local



Mdlalose

(Mabee) Mdlalose, special projects coordinator for Petroleum Agency SA and chair of the Social Responsibility Committee for the conference. "I believe

groups will benefit from AAPG's presence in Cape Town by receiving surplus food and materials, while other groups will have the opportunity to sell handmade items on the exhibition floor.

"It is the right thing to do," said Njabulo

that being a good corporate citizen (means) going beyond the organization's mandate of just doing your business. It means looking for opportunities to strategically develop programs and help communities where you operate."

It means, she continued, "intervention outside corporate walls and ensuring sustainability of communities, society and the environment."

To accomplish that mission in Cape Town, Mdlalose's committee (five members) have worked since January to organize an initiative that includes:

✓ An "Educator and Learners" program, where 100 teachers and about 200 students from in and around Cape Town have been invited to attend six information sessions that will include a tour of the exhibition hall.

All will receive packs with learning and teaching resources.

"South Africa children know very little about geology and what geologists do," she said. "This will be an opportunity for them to get information and to interact with geologists young and old."

✓ Several groups from Cape Town and the surrounding region will have booths in the exhibits hall to show and sell their handmade jewelry, handicrafts, cultural artifacts and other products; all groups will be from "poverty stricken or semi-urban areas," Mdlalose said.

✓ Clean uneaten food from various activities will be distributed to locations that provide meals for needy groups, such as centers for the homeless and orphanages.

✓ Bags, pens, exhibitor handouts and other goods that delegates do not need or take will be given to schools in underprivileged areas.

✓ A recycling program will be in place for shipping material.

✓ A special forum on "Global Climate Change as Viewed From an African Perspective," chaired by past AAPG vice president-Sections John Armentrout and Jeffrey Levine, will be held Tuesday night (Oct. 28).

The forum is open to the public and will include time for questions and comments.

Helping others is not a new concept for Mdlalose. In addition to her role as Petroleum Agency SA's special projects coordinator she also is responsible for her company's own Social Responsibility program.

She also manages and administers a trust that provides scholarships and money to various organizations.

"When I grew up there were no opportunities of this kind," she said. "Now I look for ways to create these opportunities for young people."

The point, she said, is "to make a difference in their lives."

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New Hedberg Set

A new Hedberg conference has been added to the 2009 AAPG slate of geoscience offerings.

"Variations in Fluvial-Deltaic and Coastal Reservoirs Deposited in Tropical Environments" will be held April 29-May 2 in Jakarta, Indonesia.

Conveners are Robert Shoup, Joe Joe Lambiase, Andrew Cullen and Chuck Caughey.

A call for papers has been issued, with a Nov. 7 deadline.

For more information go online to www.aapg.org/education/hedberg/index.cfm, or contact Debbi Boonstra at debbi@aapg.org.

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GEOPHYSICALcorner

China Study: Detecting Fractures

(The Geophysical Corner is a regular column in the EXPLORER, edited by Bob A. Hardage, senior research scientist at the Bureau of Economic Geology, the University of Texas at Austin. This month's article is the first of a two-part series: A full-wave case study detecting fractures with 3D3C seismic data in the XinChang Field of China's Sichuan Province.)

By PETER STEWART
JOHN TINNIN
JAMES HALLIN
and JIM GRANATH

This two-part series describes how Sinopec's local operating company, Southwest Petroleum Branch (SWPB), utilized full-wave seismic data to improve production from a fractured tight-gas reservoir in XinChang Field, Sichuan Province, China.

This month we detail the data-acquisition technology and the data-processing workflow that produced high-resolution images and yielded fracture information that correlated with well production.

Historically, this region has been a prolific gas producer – shallow prospects were depleted early, and the reservoirs currently targeted are now at the base of a terrestrial sequence some 20,000 feet thick.

These deeper Triassic reservoirs are low porosity (less than 4 percent) – but specific areas within the reservoir can be highly fractured.

Production has been declining, and the region now needs an injection of new technology to sustain production.

* * *

Legacy seismic data correlate poorly with existing wells, and the quality of existing seismic data is insufficient to define reservoir targets. Attention was focused on implementing a seismic program that would allow the fracture network to be understood so future drilling locations could be determined.

In this effort, a task force of ION and SWPB geoscientists found that the region produces high levels of coherent converted-shear (C-wave) energy. The team concluded that C-waves had the potential of providing stratigraphic, lithologic and fracture detail that would be crucial for understanding the reservoir and for optimizing well placements and reducing drilling risk.

The design team recommended a data-acquisition program involving dense spatial sampling, full offset and azimuth distributions, and the adoption of 3C digital sensors.

With the design approved, a new survey was acquired in 2004 using an I/O System Four® recording system and VectorSeis® full-wave 3C sensors.

It became apparent shortly after data-acquisition began that the new P-wave data were high quality, and that bandwidth and signal-to-noise ratios were a step change improvement over legacy seismic data. In addition, high-quality, full-azimuth C-wave data were also recorded.

* * *

The data-processing workflow that

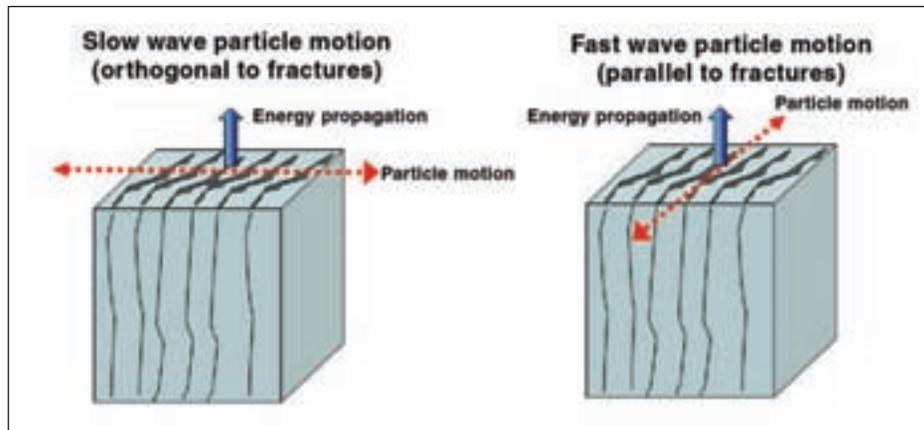


Figure 1 – Polarized shear-wave: parallel and orthogonal to fractures.

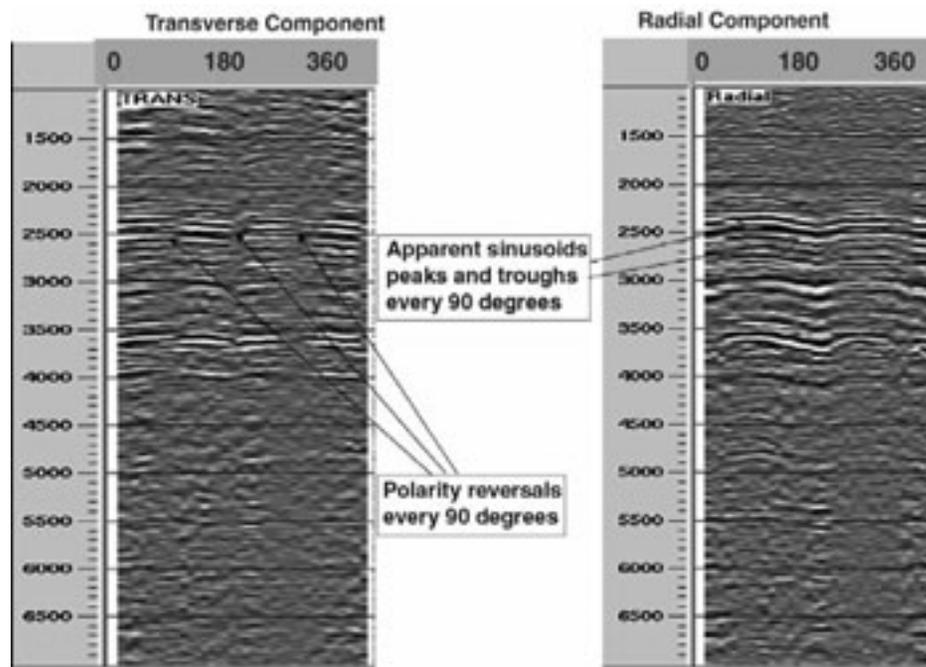


Figure 2 – Azimuth-sector gathers displaying characteristic signatures for radial and transverse components.

was implemented resulted in high-resolution C-wave images. An important byproduct of this workflow was information related to fracture orientation and to fracture intensity.

The first step in the data processing was to rotate horizontal components from their recorded field orientations to their source-receiver azimuths, or “radial,” directions.

If seismic data are azimuthally isotropic, all C-wave reflection energy would be concentrated on the radial component, and data acquired by the transverse sensor could be discarded. However, after rotating the XinChang data to radial/transverse coordinates, a significant amount of C-wave energy remained on the transverse component.

This data behavior confirmed the presence of shear-wave splitting, which occurs when a shear wave encounters an azimuthally anisotropic layer such as one of the XinChang fractured reservoir units.

In S-wave splitting, the C-wave polarizes into two new waves, a phenomenon known as “birefringence.” One of the new split waves is polarized parallel to, and the second orthogonal to, the fracture orientation.

The velocities of the two waves differ – the faster wave being polarized parallel to the fractures, and the slower wave polarized orthogonal to the fractures (figure 1).

In addition, each of the new waves splits again when it encounters a new anisotropic layer, resulting in a complicated mix of waves arriving at each sensor.

Shear-wave splitting can yield valuable information regarding

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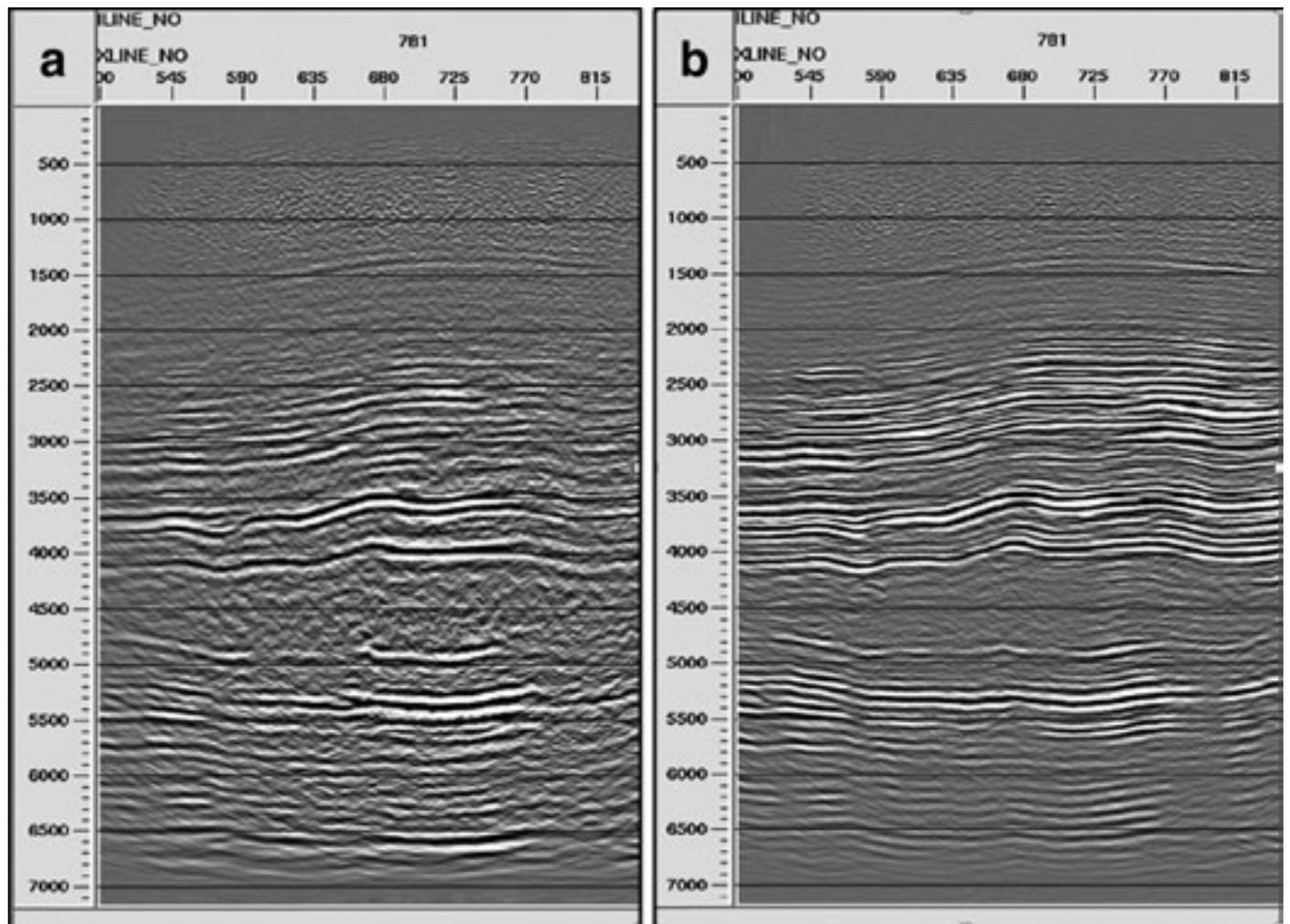


Figure 3 – Converted-wave images before (a) and after (b) layer-stripping anisotropic corrections.

continued from previous page

fractures; however, unless addressed correctly, wave-splitting reduces the bandwidth of stacked or migrated C-wave images. Thus, our data-processing workflow was modified to capitalize on the shear-splitting that was detected.

After sensor rotation to radial/transverse coordinates, the main components of the workflow included surface wave attenuation, resolution of shear-wave statics, surface-consistent signal processing and Q compensation. These steps were performed independently on the radial and transverse components.

Next, the data for each component were sub-divided into 36 10-degree, azimuth sectors. Each azimuth sector was migrated separately via a prestack C-wave time migration. This migration step required a velocity model for both P and S wavefields.

Because it is difficult to derive shear-wave velocities from converted-wave data, we developed a novel scheme in which P and S velocity fields were re-parameterized into new variables that could be estimated from the C-wave data.

Following migration, each sector volume was subjected to residual move-out correction, muting and stacking. The azimuth volumes were then re-assembled into azimuth-sector gathers for each migration bin.

For any migrated output location, a C-wave reflection has a characteristic signature on the radial and transverse components as a result of interference patterns between the polarized fast and slow waves. Typically, radial data have a sinusoidal type of behavior with azimuth, while transverse data exhibit polarity reversals every 90 degrees of azimuth (figure 2, previous page). If these two C-wave responses were stacked as is, the result would be a low-resolution image (figure 3a, previous page).

* * *

The most important step in the data processing was our layer-stripping anisotropic correction. This procedure removed the effects of shear-wave spitting at each anisotropic boundary by simulating the effect of an isotropic medium.

A single anisotropic layer was stripped to form an isotropic layer in the following manner:

✓ Step 1 – Knowing that azimuths corresponding to polarity reversals observed on the transverse component define fracture orientation, these azimuth angles were used to rotate the data from radial/transverse to fast/slow directions.

✓ Step 2 – A cross-correlation between fast and slow data determined the time lag between these two wave modes; a static correction was then done to time align slow and fast data.

✓ Step 3 – An additional rotation back to radial and transverse coordinates concentrated all of the energy onto the radial component and produced azimuthally isotropic data. These adjusted data were stacked to form a high-resolution C-wave image (figure 3b, previous page).

An important byproduct of step one is fracture orientation. For any particular layer, maps of fracture orientation throughout the entire data volume were generated using the azimuth angles determined in this data-processing step.

Second, the amount of fracturing is

related to travel-time differences between fast and slow shear-waves, and the cross-correlation in step two yielded time-difference information that was used to infer fracture intensity.

* * *

Next month's article will detail the post-processing and interpretation workflow that led to 19 new drilling locations.

Three of these sites have been drilled and completed as gas wells, and one of these wells is now the most productive well in the area. □

Editor's note: Peter Stewart and AAPG members John Tinnin, James Hallin and Jim Granath are all with ION Geophysical/GX Technology.

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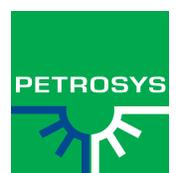


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WASHINGTONwatch

geoCVD Covers a Lot of Ground

By DAVID CURTISS
GEO-DC Director

There may be no peer-reviewed study of this phenomenon, but I submit that cobblers do good business in election years.

Consider, after all, the millions of miles both candidates and supporters walk during the course of a campaign. On this journey they reach out to people, listen to them, try to understand their problems and perspectives and then tell them how they would respond if elected to office. It's an educational process that goes both ways.

Nearly 20 AAPG members had a similar experience during the first-ever Geosciences Congressional Visits Day (geoCVD), held Sept. 8-10. The Geosciences Working Group, led by the American Geological Institute and composed of its member societies with offices in Washington, D.C., began planning this event in early 2008. Our goal was to create an event that educated lawmakers and staff of the importance of geosciences in every day life.

The response was tremendous, with more than 60 geoscientists flying in from around the country.

For AAPG members the event began on Monday afternoon (Sept. 8), with a kick-off briefing led by **Deborah Sacrey**, chair of the Washington Advocacy Group, a subcommittee of the DPA Government Affairs Committee. At the briefing we focused on the key issues we would discuss with policymakers in the context of the current energy situation: access to federal lands for exploration and production, and increased federal oil and



The contingent of AAPG participants gathers during Geosciences Congressional Visits Day in Washington, D.C.

gas R&D.

AAPG has long-maintained the importance of responsibly developing the nation's oil and gas resources on behalf of its citizens. Similarly, AAPG has a long history of supporting federal R&D. In fact, AAPG President Scott Tinker recently communicated with policymakers the need for a dramatic increase in federal oil and gas R&D spending, both for new technologies – especially for unconventional resources – and to rejuvenate the nation's universities and colleges that are training the next-generation work force.

On Tuesday morning, the AAPG group

met with the Department of Energy fossil energy program and staff from the House Energy and Minerals Subcommittee. That afternoon we traveled to the American Geophysical Union headquarters to meet with the other societies and prepare for our Hill visits on Wednesday.

* * *

Wednesday morning we headed to Capitol Hill, where each participant had a scheduled meeting with their representatives and/or staff.

We had a receptive audience – lawmakers and staff had just returned from

the five-week August recess, where they had spent a lot of time at home talking to constituents, and energy was at the forefront of everyone's mind.

The purpose of these meetings was to talk about access and R&D, but also to listen and answer questions. Our goal was to build relationships with policy makers and their staff to become trusted sources of information, not just through GEO-DC, but also as individual citizens.

The diverse expertise and experience of our group represents a significant brain-trust:

See **CVD**, page 46



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- **Structural Geologist** with a specialization in fold-thrust belts.
- **Regional Geologist** with specialization in basin analysis.
- **Exploration Geophysicist** with onshore fold-thrust belt or foreland basin experience.

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- **Exploration Geologist** with extensional systems experience.
- **Exploration Geophysicist** with salt basins experience.
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Carbon Capture Rules Advance

By DAVID CURTISS
GEO-DC Director

The prospect of commercial-scale carbon sequestration took another step forward this summer.

On July 25, the U.S. Environmental Protection Agency (EPA) proposed a rule that regulates carbon dioxide injection for long-term sequestration under the Safe Drinking Water Act through the Underground Injection Control (UIC) program.

EPA has been working for more than a year (see April 2008 EXPLORER) on a regulatory regime to handle carbon dioxide injection for long-term geologic sequestration.

The proposal does not modify existing regulations of carbon dioxide injection for enhanced oil and natural gas recovery, nor does it regulate carbon emissions to the atmosphere.

It does create a Class VI well category under the UIC program for geologic sequestration of carbon dioxide.

Building on its long-standing UIC experience, EPA's rule covers issues ranging from siting, area of review, well construction and operation to mechanical integrity testing, monitoring, well plugging and post-injection site care.

To be sure, technical hurdles loom:

✓ The cost of capturing CO₂ from coal-fired power plant flue gas remains high.

✓ Ongoing pilot-scale demonstration projects around the nation are testing the technical feasibility of injecting large volumes of CO₂ into the subsurface through a small number of wells.

✓ Public acceptance of such large-scale injection is untested.

In announcing the proposal EPA also has invited public comments.

Wanted: Expert Opinions

An important factor in gaining public acceptance for large-scale geologic sequestration is a regulatory framework that provides a level of assurance that this can be done safely.

But it is a balancing act:

✓ Too much regulation will trip up companies from the outset as they launch sequestration operations.

✓ Too little regulation and those same

operations will drown in a sea of litigation.

Thus, it is important to get this right by soliciting input from the experts.

EPA is accepting that input through Nov. 24. For information on how to submit comments, visit the GEO-DC Action Alert Web page.

Rebecca Dodge, president of the Division of Environmental Geosciences, also has alerted DEG committees and members to this request for public comment.

This is an opportunity for AAPG

members. No other profession has experience handling and injecting large volumes of carbon dioxide into the subsurface. As such, the deployment of commercial-scale carbon sequestration as a viable clean-coal technology rests on our shoulders.

Offering our scientific knowledge and experience to ensure adequate regulation of carbon sequestration operations should further boost public confidence that it can be done safely. □

CVD

from page 44

✓ **Jim Hill** represented California, meeting with staff for Sens. Dianne Feinstein and Barbara Boxer, and Rep. Elton Gallegly.

✓ **David Hawk** of Idaho met personally with Sens. Larry Craig and Mike Crapo and Rep. Bill Sali, and with staff of Rep. Mike Simpson.

✓ **Lee Harvard** met personally with Senator Pete Domenici, and also met with staff of Sen. Jeff Bingaman and Rep. Stevan Pearce.

✓ **Pete MacKenzie** represented Ohio, meeting with staff of Sens. George Voinovich and Sherrod Brown, and Rep. Deborah Pryce.

✓ **Joel Alnes, Robert Hefner IV and Robert Hefner V** of Oklahoma met personally with Sens. Jim Inhofe and Tom Coburn. Alnes met with Rep. John Sullivan and the Hefners met with Rep. Mary Fallin.

✓ **Mary Harris** from South Carolina met with staff from Sens. Lindsey

Graham and Jim DeMint, and with staff of Rep. Gresham Barrett. She also got to meet the congressman at the end of her meetings.

✓ Our large Texas delegation met with staff for Sen. Kay Bailey Hutchison – and then met the senator in the hallway – and staff for Sen. John Cornyn. In addition, **Pat Gratton** visited with Rep. Pete Sessions; **Dan Smith** met with Rep. Al Green's staff; **Paul Britt** met with Rep. Nick Lampson's staff; **Howard Harper** met with Rep. Mike Burgess's staff; and **Deborah Sacrey, John Jordan, Dawne Jordan, Mike Loudin and Denise Stone** met with staff of Rep. John Culberson.

✓ **Jeff Eppink** from Virginia met with staff of Sens. John Warner and Jim Webb, and with staff for Rep. Frank Wolf.

✓ **Carl Smith** of West Virginia, met with staff for Sens. Robert Byrd and Jay Rockefeller, and had a brief meeting with Rep. Alan Mollohan.

✓ The group also met with staff from the Senate Energy and Natural Resources Committee.

* * *

Thomas Jefferson once remarked, "I know of no safe repository of the ultimate power of society but people. And if we think them not enlightened enough, the remedy is not to take the power from them, but to inform them by education."

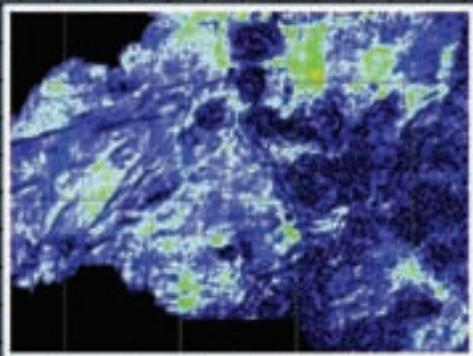
Education is a central focus at AAPG; whether it is helping our members improve their skills, educating the general public through www.petroleumgeology.org or informing policymakers and policy through GEO-DC. This is a societal responsibility we all have as citizen scientists.

Thanks to all AAPG members who participated in geoCVD for investing their time, their energy and their resources to bring knowledge and expertise to Washington, D.C.

Now, I'm off to the cobbler. Who knew that shoe leather was a cost of maintaining our democracy?

(Editor's note: David Curtiss, head of AAPG's Geoscience and Energy Office in Washington, D.C., can be contacted at dcurtiss@aapg.org; or by telephone at 1-202-684-8225.)

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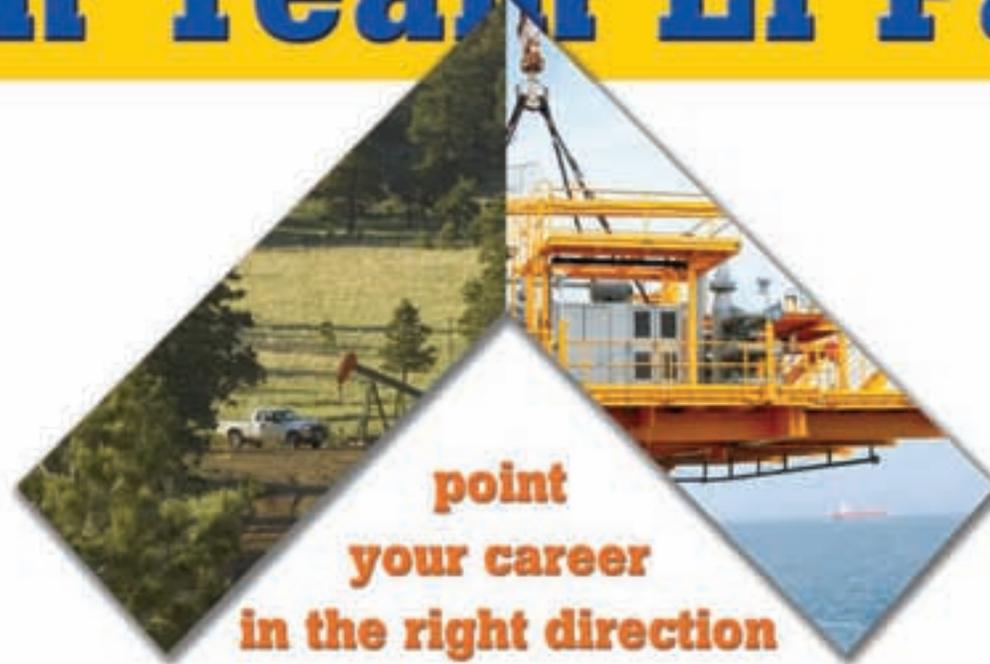
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PROFESSIONAL news briefs

Pratt Barndollar, to president and director, Power Oil & Gas, Calgary, Canada. Previously vice president-exploration, Napa Energy, Calgary, Canada.

David Bird, to executive vice president-North America, Geomage, Denver. Previously exploration adviser-Rockies and Canada, Samson Resources, Denver.

Christopher H. Bradley, to chief geologist, Vanco Energy, Houston. Previously senior geologist, Vanco Energy, Houston.

Edgar K. Cross, to staff geologist, Shell Nigeria, Lagos, Nigeria. Previously senior geologist, Shell, Rijswijk, Netherlands.

Tony D'Agostino, to geologic adviser-unconventional resources, Hess Corp., Houston. Previously geologic adviser, Weatherford-OMNI Labs, Houston.

Harold G. Davis, to senior geological adviser-deepwater Gulf of Mexico, Devon Energy, Houston. Previously senior geological adviser-Permian New Mexico, Devon Energy, Oklahoma City.

Richard L. "Dick" Findley has been appointed to the board of directors, RPT Uranium, Vancouver, Canada. Findley is president, Prospector Oil, Billings, Mont.

Mark Gresko, to international exploration manager, Devon Energy, Houston. Previously supervisor-Eastern shelf asset team, Devon Energy, Houston.

José I. Guzman, to senior technical adviser, iReservoir.com, Houston. Previously senior research geoscientist, C&C Reservoirs, Houston.

Bruce Hart, to principal seismic stratigrapher, ConocoPhillips, Houston. Previously associate professor, McGill University, Montreal, Canada.

Jim Lantz, to development geology-new well delivery, Western Desert, GUPCO (BP Egypt), Cairo, Egypt. Previously development geology-North Kuwait field development, BP Kuwait (KOC secondee), Ahmadi, Kuwait.

Jeffrey J. Lobao, to managing director-Asia Pacific, Lundin Petroleum, Singapore. Previously exploration and new ventures manager-Asia Pacific, Lundin Petroleum, Singapore.

Tim Maxwell, to manager-geology and geophysics (northern North Sea), CNR International (UK), Aberdeen, Scotland. Previously exploration manager-central Alberta district, Canadian Natural Resources, Calgary, Canada.

Jay McGregor, to vice president-business development, Houston. Previously senior geologist, Houston Energy, Houston.

Bruce G. McIntyre has been appointed to the board of directors, Northern Hemisphere Development Corp., Vancouver, Canada. McIntyre is an independent geologist, Calgary, Canada.

Tim McMahon, previously geologist, Atlantic margin exploration, ConocoPhillips Norge, Tananger,

Norway. Previously staff geologist, new play development-Southeast Asia, ConocoPhillips, Houston.

Kevin McVey, to president, ETROA Resources, Covington, La. Previously senior geoscientist, Woodside USA, Covington, La.

Steve Meyer, to exploration communications coordinator, Shell International, Rijswijk, Netherlands. Previously senior explorer-exploration new ventures, Shell International, Rijswijk, Netherlands.

Adel R. Moustafa, to chairman, department of geology, Ain Shams University, Cairo Egypt. Previously professor, department of geology, Ain Shams University, Cairo Egypt.

Onochie S. Okonkwo, to geologist, TXCO Resources, San Antonio. Previously student, University of Texas at San Antonio.

Ken Peters, to business development manager-hydrocarbon resource assessments, IES-Schlumberger, Aachen, Germany. Previously with the U.S. Geological Survey, Menlo Park, Calif.

Mark Przywara, to geological consultant, Tri-Tech Energy Capital, Humble, Texas. Previously senior geologist, Rising Star Petroleum, Dallas.

Trent Rehill, to senior staff geologist, Artumas Group, Calgary, Canada. Previously senior explorationist, Woodside Energy North Africa, Tripoli, Libya.

Shaun M. Richardson, to director-new ventures Far East, Harvest Natural Resources, Singapore. Previously director of exploration, BG Group, Mumbai, India.

David Schoderbek, to gas hydrates team leader, ConocoPhillips, Anchorage, Alaska. Previously senior exploration adviser-northern frontiers, ConocoPhillips, Calgary, Canada.

Scott G. Schulz, to senior geophysicist, Hungarian Horizon Energy, Denver. Previously senior explorationist, Koch Exploration, Englewood, Colo.

Erik Scott, to chief geologist-Gulf of Mexico, Marathon Oil, Houston. Previously geology specialist-sedimentology, Shell E&P Europe, Aberdeen, Scotland.

F. Hasan Sidi, to QI geophysicist, Woodside Energy, Perth Australia. Previously project geoscientist, Fugro-Jason, Perth, Australia.

Randall H. Skiff, to chief geoscientist/partner, Arrowhead Energy Advisors, Houston. Previously managing partner, Steller Resources, Houston.

Enrique Velasquez, to international exploration manager, Empresa Colombiana de Petroleos, Bogota, Colombia. Previously senior geologist-international exploration group, Occidental Oil and Gas, Houston.

continued on next page



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REGIONS§ions

Africa Region Seats Diverse Committee

(Editor's note: Regions and Sections is a regular column in the EXPLORER offering news for and about AAPG's six international Regions and six domestic Sections. Contact: Carol McGowen, AAPG's Regions and Sections manager, at 1-918-560-9403; or e-mail to cmcgowen@aapg.org.)

By **CAROL MCGOWEN**
Regions and Sections Manager

Newly elected AAPG Africa Region leaders from five diverse countries take office immediately and will serve two-year terms.

Following the recent election using AAPG's online voting process, the officers from Ghana, Nigeria, Morocco, South Africa and Egypt assume responsibility to grow membership and enhance delivery of AAPG services to geoscientists in the Region.

Elected for three-year terms were the Africa Region member of the AAPG Advisory Council and four delegates to the AAPG House of Delegates.

The new Region leaders are:
 President – **James Kofi Agbenorto**, Ghana National Petroleum, Tema, Ghana.
 President-elect – **Nosa Omorodian**, Schlumberger, Nigeria/Houston.
 Vice president – **Haddou Jabour**, ONHYM, Rabat, Morocco.
 Secretary/treasurer – **Adedoja Ojelabi**, ChevronTexaco, Lagos, Nigeria.



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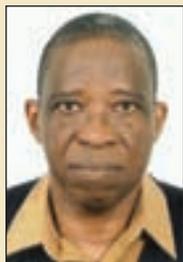
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Jabour



Ojelabi



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Akinpelu



Bosworth



Morabet

Advisory Council

Joe Ejedawe, Shell International E&P, Abuja, Nigeria.

House of Delegates

Bayo Akinpelu, Chevron, Lagos, Nigeria
 Bill Bosworth, Apache, Cairo, Egypt.
 Aloundir Morabet, Tamounda Consulting, Rabat, Morocco.
 Varsha Singh, PetroSA, Cape Town, South Africa.

ConocoPhillips Venezuela, Puerta La Cruz, Venezuela.

Iain P. Wright, to technical director, Afren, London, England. Previously managing director, Jefferies, Hounslow, England.

(Editor's note: "Professional News Briefs" includes items about members' career moves and the honors they receive. To be included, please send information in the above format to Professional News Briefs, c/o AAPG EXPLORER, P.O. Box 979, Tulsa, Okla. 74101; or fax, 918-560-2636; or e-mail, smoore@aapg.org; or submit directly to the AAPG Web site.)

continued from previous page

Kenneth D. Vogel, to connection ministries/business manager, Faith Evangelical Covenant Church, Burnsville, Minn. Previously environmental manager, Ryan Companies, Minneapolis, Minn.

Coerte A. Voorhies III, to senior geophysical adviser, Remora Energy Management, Houston. Previously senior geoscientist/senior account manager, Seismic Micro Technology, Houston.

Eric A. Weiss, to senior geologist, ConocoPhillips Vietnam, Ho Chi Minh City, Vietnam. Previously senior geologist,

Students: Renewed Yet?

Students – have you renewed your AAPG membership dues yet?

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October 2008

Midland Valley

Structure World

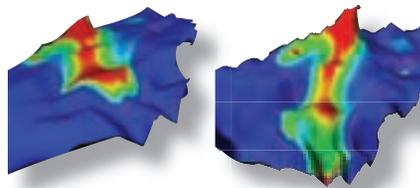
A big thanks to all who attended our User Meeting in Glasgow on 30th September and 1st October. We'll be reporting on the event in next months column. This month we explore hard or soft linked faults in our Interpreters Tip; and look forward to a few more events that we will be attending.

Midland Valley on the road...

If you missed our Technology Meeting in Glasgow last month don't worry, we will be represented at a number of events over the next few months...

Geological Society of America (GSA) Annual Meeting, 5th - 9th October.

At the Annual Meeting of the GSA in Houston, Midland Valley geologist Dr Clare Bond will be presenting her paper: "Comparing Flume and Computer Simulated Turbidity Flows - Implications for Sediment Deposition Patterns and Reservoir Quality". The research uses flume models by the University of Leeds Turbidite Research Group and computer simulated flows using Midland Valley's new 4DSediment module to look at the implications for sediment deposition patterns and reservoir quality.



Palaeosurface with turbidite flow colour mapped for flow thickness. Automated 3D turbidity current workflow in 4DMove's module 4DSediment (developed in conjunction with Royal Holloway University of London).

You can catch Clare's talk on 9th October at 11:00 within the session 'Recent Advances in Deepwater Sedimentology: Science Driven by the Search for Natural Resources'.

Move Software Demonstrations, Houston, 5th - 15th October.

Clare will also be available in Houston to demonstrate the new workflows and functionality in Move 2008.1. Contact clare@mve.com to arrange an appointment.

AAPG International Exhibition and Conference, 26th - 29th October.

We will be exhibiting at the AAPG International Conference and Exhibition on booth # 454 as part of the Upstream Technology Alliance with Badley Geoscience.

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Midland Valley Public Training, 3rd - 4th November.

We will be holding a public training event at our Glasgow headquarters looking at the new workflows and interoperability in our recent Move2008.1 release. Be quick to sign up because places are limited.

For further information email Sarah, events@mve.com.

We hope to see you at one of these events over the next month!

Interpreters Tip: Hard or Soft Linked Faults?

Good interpretation is the key to understanding many sub-surface geological systems. But even the best interpreters are limited by the clarity of the dataset that they have to interpret. The interpretation of poorly constrained data is thus a key issue in geoscience (see also the interpreters tip for July).

In this interpreters tip we consider the issue of interpreting faults as hard or soft linked systems.

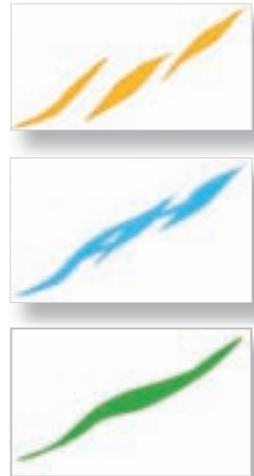


Figure 1: Top image shows soft linked faults; middle image illustrating hard linked faults; and the bottom image showing a single fault.

Decisions on how to link fault systems can have implications for reservoir connectivity or compartmentalisation. Contrast the two interpretations of the seismic section. In the first interpretation the unit of interest is clearly separated by a single fault and juxtaposed against different units, in the second interpretation multiple soft linked faults result in the continuity of the unit (given fault zone permeability) across the fault zone. When working on 2D-seismic lines it is important to consider the 3D geometry of the area to distinguish between areas of oblique transportation (relay ramps etc.) where soft linked systems may be dominant. If in doubt it is worth considering the impact of more than one fault model on reservoir connectivity.



Figure 2: Alternative interpretations, single hard linked fault and multiple soft linked faults of a seismic section.

For further information on using our structural modelling software Move to build and test different fault systems or to receive the tip by monthly email, contact help@mve.com.

WWWupdate

Search – and You Will Discover

By JANET BRISTER
Web Site Editor

One of my favorite things is attending meetings. This is where I am able to talk to AAPG membership face-to-face. I learn about the way they organize their information, how they approach finding it and then gain their unique perspectives, assumptions and, particularly, surfing habits.

I'm always amazed when told, "You know, you need to put (fill in the blank) on the AAPG Web site."

Usually I'm responding with a little amazement, as in, "It's already there! Let me show you."

At our recent Leadership Conference, held in August in Tulsa, I had this experience again and finally realized why this may be happening.

I met one member who wanted to know where to find *Search and Discovery*, AAPG's online journal.

Now, by design, *Search and Discovery* is very clearly posted on the AAPG home page in the bottom right corner. It is a half-inch by 1.5-inch blue button. It is very visible. From our perspective, it should be easy to find.

But from her perspective, not so much.

So we open up a laptop and this member shows me how, upon reaching aapg.org, she immediately clicks on "Members Only," on the left side of the page.

In other words, she never looks at the home page. Why should she? From her perspective, it's not for members; "Members Only" is for members.

Enlightenment (for me)!



✓ *Search and Discovery.*
✓ The entire Internet.
The aapg.org domains include all of AAPG's divisions' sites, students, AAPG Foundation and our soon-to-be-launched blog site and collaboration areas.

We'll be introducing a blog sometime very soon, featured on the AAPG EXPLORER home page. The blog will be populated by EXPLORER staff and invited writers.

We're excited about adding this new feature and what it will bring our membership.

* * *

Since February 2006 a PDF of the complete EXPLORER for download is posted.

This feature was added especially for those members who must wait for postal delivery to receive their current issue – but it's a service that's available to all.

It is an interactive PDF. When you hover over table of contents these articles have links that jump to the start page of the article. All links and e-mails within the issue are linked – clickable – and all page jumps, as well.

Good browsing! ☐

Other AAPG members may have this same perspective, so we'll be expanding the links in the AAPG "Members Only" section.

Google, Tool

The other question fielded frequently goes something like this: "Where can I find (fill in the blank)?"

On the bottom right side of the AAPG

home page is a wonderful tool created by Google, which searches all AAPG domains.

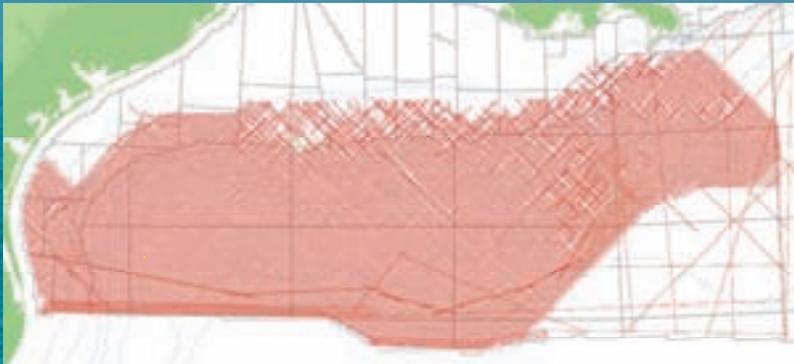
This means if the text you are looking for is located within aapg.org either in HTML or PDF, you can find it by typing that name, word or phrase in the box and hitting "return."

There are three places you may choose to search within our Google search tool:

✓ aapg.org.

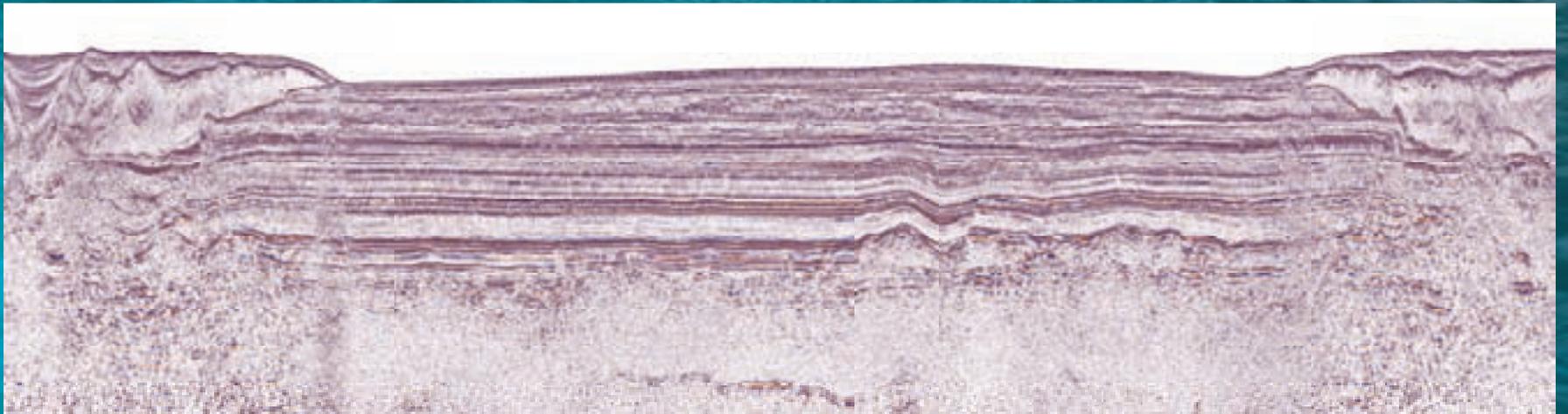


Losing Regional Perspective?



Time to Deep Focus. (10,000m Offset)

This line is a composite of 5 lines spliced together.



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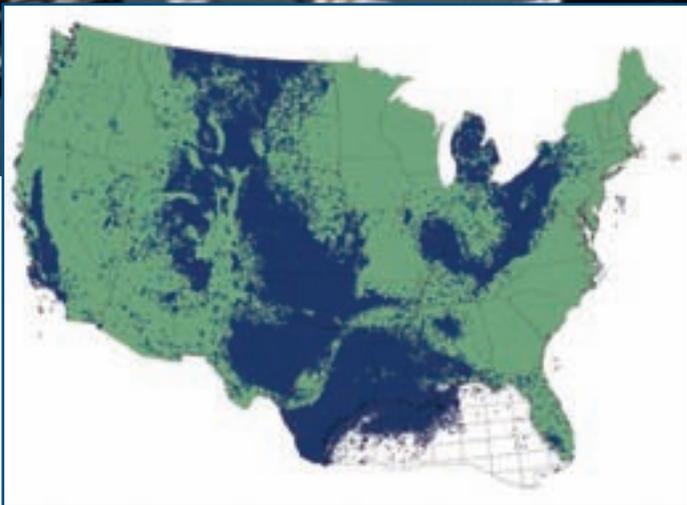
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Pittsburgh Hosts Section

"Appalachia – Unconventional Since 1859" is the theme for this year's AAPG Eastern Section meeting, set Oct. 11-15 in Pittsburgh.

The meeting is being held jointly with the Society of Professional Engineers, and the extensive technical program will give high profiles to both the hot Marcellus Shale play and carbon sequestration.

More than 80 technical papers will be presented, along with field trips (including "The Marcellus Shale Gas Play as Seen From Outcrops Within the Valley and Ridge of Pennsylvania"), short courses, workshops and an exhibits hall featuring more than 50 exhibitors.

A seven-paper session specifically

on the Marcellus Shale will be held, as well as an all-day session of CO₂ sequestration.

Other sessions will include:

- ✓ Tight Sands and Shale.
- ✓ Mississippian-Devonian Shales.
- ✓ Improved Enhanced Recovery Methods.
- ✓ Reservoir Analysis and Development.
- ✓ Utica Shale/Technology Applications.
- ✓ Drilling, Completions and Horizontal-Multilateral Wells.

More information, including registration details, can be found online at <http://www.aapgspe2008.org/index.htm>. □

Auto, Homeowner Insurance Offered

By VIRGINIA THAEMERT

AAPG's GeoCare Benefits Insurance Program has teamed up with Liberty Mutual to offer members Group Savings Plus™ – a program that provides savings on auto and homeowner insurance.

With Group Savings Plus, members enjoy competitive rates on auto and home insurance based on a savings system that calculates insurance premium rates on the basis of several factors including level of education,

age, driving violation record and type of auto equipment.

The average group member savings on auto insurance is \$327.96* per year. Auto rates are guaranteed for 12 months and automatic monthly payment is offered with no finance charges.

Members can obtain information about the Liberty Mutual plans from:

✓ Call centers – The AAPG GeoCare toll-free number is 800-789-6419. Call centers are staffed Monday through Friday from 7 a.m. to 11 p.m. and, Saturday from 7 a.m. to 9:30 p.m. (ET).

✓ The Internet – Quotes and coverage can be accessed online 24/7. For access go to www.geocarebenefits.com/aapg-autohome.asp.

✓ Local offices – A member can be connected to the nearest Liberty Mutual office during local business hours by calling 800-225-8281. The call will be transferred according to the member's requested zip code.

Rates are the same, regardless which option is used. For maximum savings, mention your AAPG membership or AAPG's client number (#112934).

Liberty Mutual is a Fortune 100 company that has been writing policies since 1912. Awarded an "A" (excellent) rating by A.M. Best Company (an independent organization that rates an insurer's financial strength and performance), the company offers group auto and home coverage to members of more organizations than any other provider in North America.

For general questions regarding this program contact the GeoCare benefits broker's office at 800-254-4788.

Liberty Mutual also offers personal umbrella liability insurance; renters insurance; condo insurance; and boat, RV and motorcycle insurance.

* Figure based on a February 2008 sample of auto policyholder savings when comparing their former premium with those of Liberty Mutual's group auto and home program. Individual premiums and savings will vary.

(Editor's note: *Thaemert is with Creekmore Livingston Inc., the broker for AAPG's GeoCare benefits insurance program.*)



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FOUNDATION Update

Foundation Trustees Name Officers

New AAPG Foundation Trustee Associates officers for 2008-09 were elected recently during the group's annual meeting in Jackson Hole, Wyo.

Newly elected officers are:

☐ Lee Backsen, chairman, Houston.

☐ Donald A. O'Nesky, vice chair, Venice, Fla.

Joining them on the Trustee Associates' executive team will be Jay Henthorne, who will serve the second of his two-year term as secretary/treasurer.

More than 150 Trustee Associates and guests – including spouses and SEG Trustee Associates – attended this



Backsen



O'Nesky



Henthorne

year's meeting, which featured a presentation on "The Unconventional Gas Revolution: U.S. Gas Capacity

Surging Ahead," by Robert W. Esser, Cambridge Energy Research Associates.

Other business included reports by Foundation Chairman Bill Fisher; Financial Campaign Co-chair Jack Threet and Foundation Executive Director Rick Fritz.

The next Trustee Associates meeting will be held Oct. 7-11, 2009, in Ponte Vedra Beach, Fla.

* * *

Trustee Associates continue to demonstrate leadership through their ongoing financial support of Foundation activities, especially those dedicated to the educational outreach initiative programs.

Recent gifts have been received from:

✓ John and Colleen Silcox, who provided a \$12,500 gift to be used to support the Peter Gester Memorial Grant-in-Aid, K-12 Education Fund and the General Fund.

✓ Sam Peppiatt contributed \$10,000 to support the Digital Geology Endowment Fund.

Gifts and pledges to the campaign at press time totaled \$23,913,000.

* * *

In other AAPG Foundation news, three members have joined the Trustee Associates. They are:

☐ John Bookout, Houston.

☐ Kay Pitts (current AAPG treasurer), Bakersfield, Calif.

☐ Mike Forrest, Duncanville, Texas.

They bring the Trustee Associates' total to 266.

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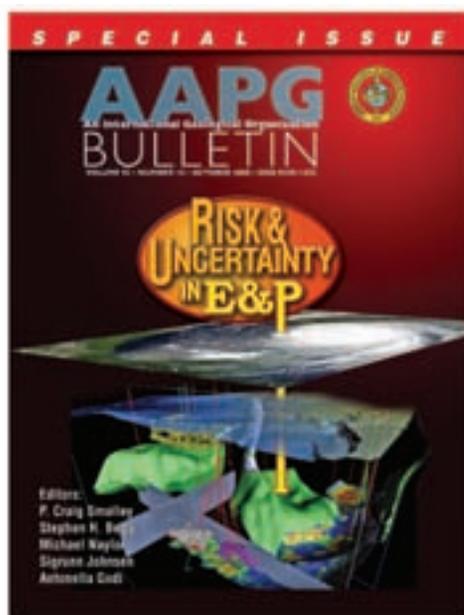
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The October 2008 cover of the AAPG Bulletin

More science than you can shake a pick at.

Handling risk and uncertainty in petroleum exploration and asset management: An overview

P. Craig Smalley, Stephen H. Begg, Michael Naylor, Sigrunn Johnsen, and Antonella Godi

Effective decisions that minimize risk exposure while maximizing project value result from a proper understanding of risk and uncertainty in petroleum exploration and asset management across all stages of field life.

Toward consistency in petroleum exploration: A systematic way of constraining uncertainty in prospect volumetrics

Dave Quirk and Rick Ruthrauff

Real point resource iteration is a new tool for improving consistency and predictability in volumetric assessments that incorporates historical data on discoveries and provides a simple means for checking the validity of probabilistic volumetrics in undrilled prospects.

A method to estimate block values through competitive bidding

Ricardo Furtado, Saul B. Suslick, and Monica R. Rodriguez

While the bidding process is widely used to optimally distribute exploratory acreage, block value estimation remains a challenge for both governments and companies. By analyzing successful bids, proxies for the unknown values of blocks are developed for use as an auxiliary decision framework.

A Bayesian belief network approach for assessing the impact of exploration prospect interdependency: An application to predict gas discoveries in the Netherlands

J. D. Van Wees, H. Mijnlief, J. Lutgert, J. Breunese, C. Bos, P. Rosenkranz, and F. Neele

Bayesian methods allow for real-time updating of success probability in exploration portfolios with positively correlated prospect interdependencies. In application, this method clearly increases both the range and expected net present value of the Netherlands gas portfolio.

Managing trade-offs between conflicting goals through a portfolio visualization process

Stephen M. Rasey

Building a robust portfolio often results in advancement of one goal to the detriment of another, thus necessitating an understanding of these trade-offs. A gradient search process for optimizing portfolios holds advantages over traditional linear and mixed integer-linear programming methods.

The effect of methodology on volumetric uncertainty estimation in static reservoir models

Hélène Beucher, Didier Renard, Brigitte Doligez, Marco Pontiggia, and Giuseppe Bellentani

The methodology for estimating volumetric uncertainty in static reservoir models introduces significant uncertainty, affecting both the determined mean volume and standard deviation, and must also be considered during assessment.

I would rather be vaguely right than precisely wrong - a new approach to decision-making in the petroleum exploration and production industry

Reidar B. Bratvold and Steve Begg

Many exploration and production projects fail to deliver promised performance. A holistic, integrated approach to assessing uncertainty integrates the technical and business aspects of decision making, improving the quality of choices made with respect to allocation of resources.

Using value of information to determine optimal well order in a sequential drilling program

Peter Cunningham and Steve H. Begg

During sequential offshore drilling, wells closest to the platform are typically drilled first. However, a value of information approach, when used proactively, may reveal conditions under which a longer offset well may inform the strategy for subsequent wells and should be drilled first.

Studies of United Kingdom Continental Shelf fields after a decade of production: How does production data affect the estimation of subsurface uncertainty?

Pete Smith

Uncertainty studies of fields in the United Kingdom Continental Shelf are re-examined and compared to actual outcomes to assess the skill in production prediction. Guidelines based on the decade of new subsurface knowledge improve the uncertainty assessment of future field developments.

Uncertainty in prospect evaluation: Lessons from the movie industry

Pierre Delfiner

An analog from the movie industry, prediction of opening day ticket sales compared with actual sales, is used to determine whether averaging a number of independent appraisals of prospect value is preferable to relying on the assessment of a few top experts.

Responsible reporting of uncertain petroleum reserves

Mark McLane, James Gouveia, Gary P. Citron, James MacKay, and Peter R. Rose

Reporting of proved reserves requires specification of a volume that one is "reasonably certain" may be economically recovered. However, there is no prescribed confidence level, encouraging unrealistic reporting. Thus full disclosure and a unified standard of reservoir definitions are needed.



Members may access the AAPG Bulletin online at http://www.aapg.org/October_Bulletin/

Also, submit your next paper for consideration via <http://www.aapg.org/Bulletin/>

The AAPG is diligent about timely publication of the geoscience of the day.

SPOTLIGHT on...

Inaugural Holland Award Bestowed

Mark Ouimette, professor and head of geological and environmental sciences at Hardin-Simmons University, has received the inaugural AAPG Holland Award of Excellence.

AAPG Foundation Trustee Associate David "Scotty" Holland presented the award in a special ceremony in the Holland Health Science Building on the HSU campus in Abilene, Texas.

The award was established by Scotty Holland and his wife, Jacque, through the AAPG Foundation to honor faculty members at the Holland School of Sciences and Mathematics at HSU. The award, intended for "professional development and enrichment," is intended to "make the best

in the classroom better at the Holland School of Sciences and Mathematics."

"I am very honored to receive this award," said Ouimette, whose 14 years of hands-on teaching at HSU give students an appreciation for fieldwork and an authentic context for geological sciences.

"I am truly thankful to Dr. Holland and the AAPG for making it available," he added. "The award is an affirmation of the learning environment we provide here at Hardin-Simmons – you won't find the attention to detail directed toward a student's future at any public institution like what we have here."

Most of the award will go toward the purchase of much needed equipment for

the department, including a high quality microscope and a digital visual device for lectures (known as ELMO). The remainder will be used to send Ouimette to meetings focused at geoscience department accreditation.

Holland, an industry leader as well as an entrepreneur, is president of Holland Holding Inc., Holland Energy Inc. and Post Oak Petroleum. He started with Pennzoil in the mid-1960s as a senior exploration geologist, and ultimately became president and chief executive officer of Pennzoil Exploration and Production. He was group vice president of the Pennzoil Company until his retirement in 1990.

In addition to being a member of the

AAPG Foundation, Holland also serves on the boards of the Houston Museum of Natural Science and The Geology Foundation of the University of Texas.

In 1997 the Hollands established the Endowed Holland Geology Scholarship Fund; in 2000, they funded the major endowment for the HSU School of Sciences and Mathematics; and recently, their financial gift led to the Holland Award of Excellence at Hardin-Simmons University.

Recently, they were instrumental in funding the \$3.9 million Holland Health Science Building, the location of a "first of its kind" high school health sciences magnet school built and maintained by HSU (see July EXPLORER). □



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Foundation from page 54

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See **Gifts**, page 58

“hydrothermal dolomite” AND Davies

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PA003-08

Career Opportunities Available for Students

AAPG student members and jobs will be in the spotlight twice in October.

✓ First, the annual fall AAPG-SEG Student Expo will be offered Oct. 8-9 at the George R. Brown Convention Center in Houston, held in conjunction with the GSA annual meeting.

Also meeting will be the American Society of Agronomy, Crop Science Society of America, Soil Science Society of America, and the Gulf Coast Association of Geological Societies with the Gulf Coast Section of SEPM.

The Student Expo is a unique tool for linking geoscience students with industry recruiters – students get to present their

work, network and interview with multiple employers, and companies enjoy cost-efficient recruiting from a diverse and talented student population.

Activities include field trips, poster presentations (with an award session planned), an Icebreaker and interview sessions.

For more information go online to www.studentexpo.info.

✓ The AAPG Student Job Quest, held in conjunction with the Eastern Section's annual meeting, will be offered Oct. 11-12 in Pittsburgh.

The SJQ is designed for students seeking summer internships as well as full-time employment. It features a reception, poster session, networking opportunities and interviews with company representatives.

Poster presentation prizes totaling \$850 will be awarded.

For more information and to register go to www.aapgspe2008.org/p5_2.pdf. □

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For information contact:

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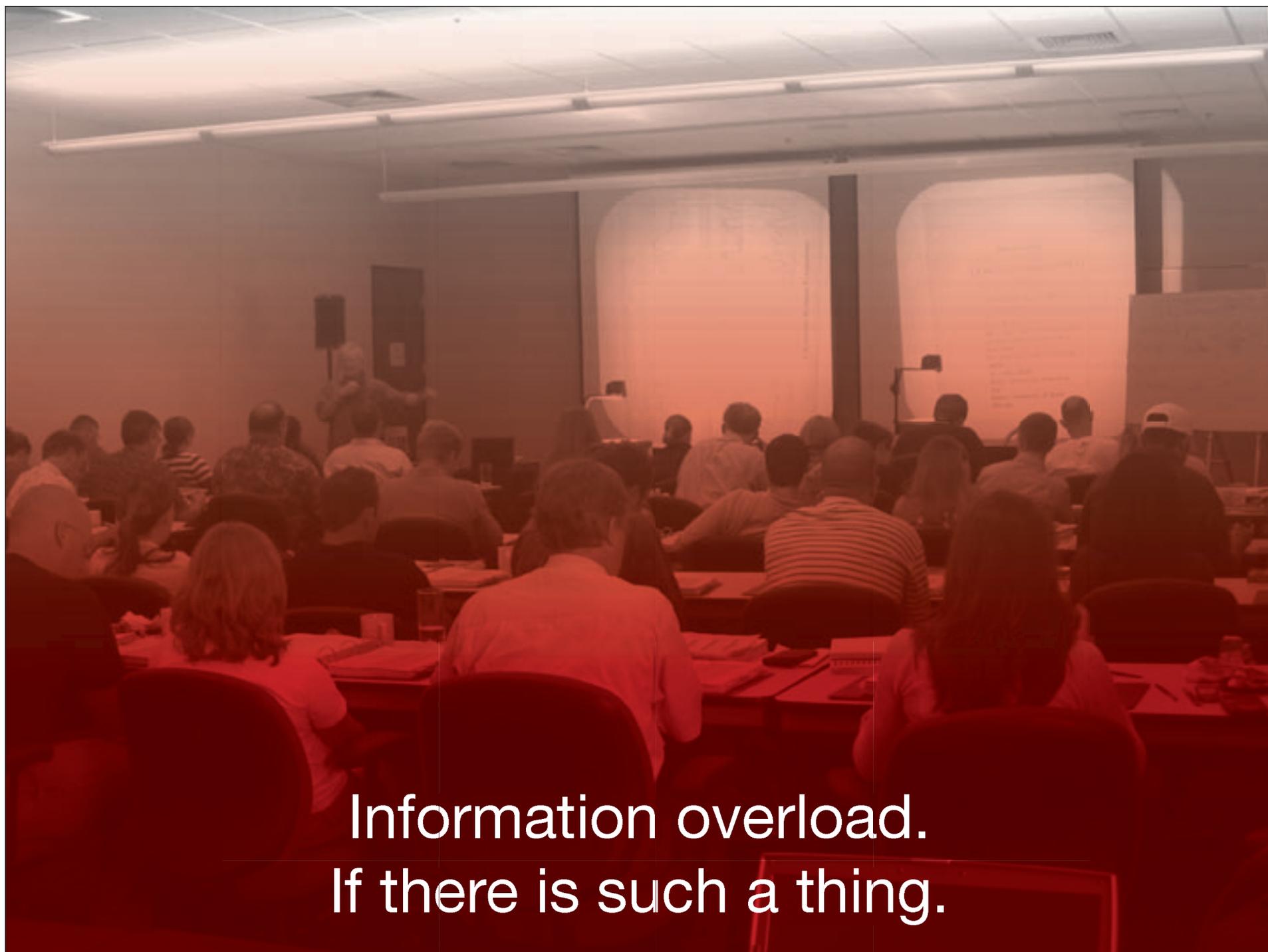
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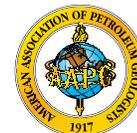
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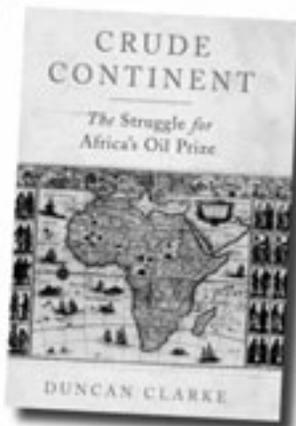
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<p>1st Asia Oil Week 2008 26th - 30th February</p> <p>Location: Singapore</p> <p>Organized by: Asian Petroleum Association (APA)</p> <p>Sponsors: Shell, BP, Agip, Total, Eni, Chevron, ExxonMobil, Petrobras, Lukoil, Gazprom, Rosneft, etc.</p>	<p>2nd Americas Symposium 2008 27th - 31st May</p> <p>Location: Houston, TX</p> <p>Organized by: American Association of Petroleum Geologists (AAPG)</p> <p>Sponsors: Schlumberger, Baker Hughes, etc.</p>
<p>1st Latin Oil Week 2008 26th - 30th February</p> <p>Location: Mexico City, Mexico</p> <p>Organized by: Latin American Petroleum Association (LAPGA)</p> <p>Sponsors: Shell, BP, Agip, Total, Eni, Chevron, ExxonMobil, Petrobras, Lukoil, Gazprom, Rosneft, etc.</p>	<p>2nd Middle East Symposium 2008 27th - 31st May</p> <p>Location: Dubai, UAE</p> <p>Organized by: Middle East Petroleum Association (MEPA)</p> <p>Sponsors: Schlumberger, Baker Hughes, etc.</p>
<p>1st Middle East Oil Week 2008 26th - 30th February</p> <p>Location: Dubai, UAE</p> <p>Organized by: Middle East Petroleum Association (MEPA)</p> <p>Sponsors: Shell, BP, Agip, Total, Eni, Chevron, ExxonMobil, Petrobras, Lukoil, Gazprom, Rosneft, etc.</p>	<p>2nd Asia Symposium 2008 27th - 31st May</p> <p>Location: Singapore</p> <p>Organized by: Asian Petroleum Association (APA)</p> <p>Sponsors: Schlumberger, Baker Hughes, etc.</p>



MEMBERSHIP & certification

The following candidates have submitted applications for membership in the Association and, below, certification by the Division of Professional Affairs. This does not constitute election nor certification, but places the names before the membership at large.

Any information bearing on the qualifications of these candidates should be sent promptly to the Executive Committee, P.O. Box 979, Tulsa, Okla. 74101.

Information included here comes from the AAPG membership department.

(Names of sponsors are placed in parentheses. Reinstatements indicated do not require sponsors.)

Membership applications are available at www.aapg.org, or by contacting headquarters in Tulsa.

For Active Membership

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Walsh, Thomas Patrick, Petrotechnical Resources of Alaska, Anchorage (C.L. Livesey, G.J. Pelka, G.T. Morahan)

Arizona

Lauretta, Dante S., University of Arizona, Tucson (W.A. Ambrose, H.H. Schmitt, M. Drake)

California

Ellis-McNaboe, M. Jane, RAM Environmental Engineering Services, Bakersfield (reinstate); Payne, Jonathan L., Stanford University, Stanford (S.A. Graham, D. Lowe, D.J. Lehrmann)

Colorado

Mordick, Briana, Anadarko Petroleum, Denver (L.T. Shannon, A. Taylor, S.H. Matthews); Thomson, James A.M., Norwest Corp., Denver (M.A. Jacobs, S.G. Stancel, R. Dodge)

Louisiana

McShee, Matthew J., Shell E&P, New Orleans (S.A. Waters, M.G. Kraenzle, C.D. McRae); Rather, Mary A., Minerals Management Service, New Orleans (H.A. Karrigan, F.A. Wiseman, A.G. Josey)

New York

Jackson, Richard A., Berkeley College, Woodside (reinstate)

South Dakota

McGillivray, Gerald Leroy, South Dakota Department of Natural Resources, Rapid City (F.V. Steece, A.K. Petres, G.W. Shurr)

Texas

Akintunde, Olusoga Martins, Schlumberger, Houston (M.D. Zoback, J.M. Harris, R.G. Lindblom); Burreson, Matthew James, Occidental Oil & Gas, Houston (L.R. Sternbach, S. Mazzoni, J.P. Smalley); Green, Kevin D., Arcturus Corp., Dallas (reinstate); Hargett, Pelham Clay, El Paso Corp., Houston (G.R. Evans, J.E. Mooney, W.G. Hargett); Hebler, Brian M., WesternGeco, Cypress (A.M. Schwartz, T.P. Bath, M. Clippard); Johnson, Mark Ryan, Baker Hughes, Rosenberg (reinstate); Lopez I., Alejandro, ExxonMobil, The Woodlands (A.F. Curet, D.J. O'Donnell, J.F. Arminio); Priday, Beth, VirTex Operating, Corpus Christi (R.L. Critchlow, M. Berkebile, D.J. Neuberger); Reavis, David Myerly, Lodestone Operating, Portland (J. Sulik, J.E. Hearn Jr., J.D. Kirby); Srnka, Leonard J., ExxonMobil Upstream Research, Houston (S.R. May, C.A. Dengo, J.C. Van Wagoner); Wu, Dena T., XTO Energy, Fort Worth (W.F. Huber, R.R. Pharis, J.D. Hargis); Wyer, Paul, ExxonMobil, Spring (S.S. Boettcher, D.L. Vixo, M. Angelich)

Angola

Namanu, Lawal Kurfi, Schlumberger, Luanda (F. Ogboi, G. Gillis, S. Oifoghe)

Australia

Raab, Matthias J., SRK Consulting, Sydney (K.C. Hill, P. Stuart-Smith, K. Vozoff)

Canada

Rokosh, C. Dean, ERCB/Alberta Geological Survey, Edmonton (A.P. Beaton, R.J.H. Richardson, M. Grobe)

continued on next page

Certification

The following is a candidate for certification by the Division of Professional Affairs.

Petroleum Geologist

Texas

Mims, Jim F., ExxonMobil Production Co., Houston (W. Carew, R.K. McClure, G.M. Gaskins)

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By VICKI BEIGHLE

AAPG Membership Manager

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already is becoming a reliable and dependable source for both sides of the petroleum world – those seeking employment and those looking to hire.

✓ **For those seeking a job** – AAPG's Career Center, with its specific focus on the petroleum industry, offers members and the geosciences industry at large an easy-to-use, highly targeted resource for online employment connections.

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✓ **For employers** – The same concept is true: Even if you aren't currently looking to hire, your company can maintain its competitive advantage with a Featured Employer Profile on the career center site, where you can showcase your organization to the industry professionals you'll one day seek to hire.

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Colombia

Escobar, Clara Elena, Nexen, Bogota (D.A. Leckie, I.C. Thomson, R.E. Graudo)

Denmark

Nygaard, Tue Strange, Baker Atlas, Copenhagen (F. Surlyk, O. Graversen, M.W. Bratovich)

England

Bosco, Michael John, Schlumberger, London (W.K. Matthews, K.A. Frew Lawrence, C. Gell)

India

Koijam, Rishikanta, Oil & Natural Gas Corp., Ahmedabad (P. Suri, S.D. Kinattukara, B.S. Dhillon); Nambiar, Viswanathan Mavila, Oil & Natural Gas Corp., Dehradun (S. Mahanti, P. Bhaumik, H.J. Singh); Sahoo, Mayadhar, Oil & Natural Gas Corp., Assam (T.K. Mathuria, R. Sharma, S. Mahapatra)

Kazakhstan

Wall, Graham John, Tethys Petroleum, Almaty (L.D. Long, D.M. Hobson, D. Robson)

Kuwait

Kumar, Bishnu, Schlumberger Oilfield Eastern, East Ahmadi (A.K. Dey, S.S. Thakur, D. Gandhi)

Nigeria

Adewole, Oriade Emmanuel Sr., Nigerian Agip Oil, Port Harcourt (A.A. Carim, M.H. Akpojivi, R.N. Basorun); Niyi-Afolabi, Nonye Blessing, Schlumberger Nigeria, Lagos (S.U. Igbokwe, M.B. Ozumba, F. Ben Amor)

Norway

Bonnier, Benjamin, StatoilHydro ASA, Stavanger (K. Wagner, C.H. Zwach, J. Efstathiou); Schimanski, Alexander, Statoil ASA, Stavanger (J.M. Bernaus, B.A. Tocher, I. Romero)

Peru

Lopez-Chavez, Adan, Petro-Tech Peruana S.A., Lima (P.A. Alarcon Medina, C.I. Bianchi-Ramirez Jr., M. Chavez-Cerna)

Republic of South Africa

Botha, Paul Jacobus, PetroSA, Cape Town (E.M. Wood, J.B. Aldrich, V. Singh); De Lange, Answa Nadene, PetroSA, Cape Town, Parow (J.B. Aldrich, V. Singh, E.M. Wood); Frankovitch, Michael, PetroSA, Parow, Western Cape (J.B. Aldrich, V. Singh, E.M. Wood); Frewin, Joanna Clare, PetroSA, Cape Town (E.M. Wood, J.B. Aldrich, V. Singh); McAloon, William, PetroSA, Parow, Western Cape (J.B. Aldrich, E.M. Wood, V. Singh); Naidoo, Rogenie, PetroSA, Cape Town (E.M. Wood, J.B. Aldrich, V. Singh); Poquioma, Florangel Escorcía, PetroSA, Cape Town (E.M. Wood, J.B. Aldrich, V. Singh); Sontundu, Siyabonga, PetroSA, Cape Town (E.M. Wood, J.B. Aldrich, V. Singh) □



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	Calgary, Alberta	September 28 – October 2
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* includes material on unconventional resource assessment

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Forty-five presentations by AAPG award winner and popular Distinguished Lecturer Paul M. "Mitch" Harris and his co-workers have been posted to *Search and Discovery*, AAPG's electronic journal.

The topics cover presentations made from 2000-08, mostly within the overall subject of carbonate reservoirs, including:

- ✓ Reservoirs in Tengiz and Korolev fields in the Caspian Basin, Kazakhstan (the focus of more than one-third of the presentations).
- ✓ Modern sediments and

carbonates on outcrop, as analogs for oil-field reservoirs.

✓ Innovative concepts and techniques – crosswell seismic, quantitative reservoir modeling and outcrop digital database are examples.

✓ Carbonate rocks from the Caspian Basin through the Mediterranean region and both Gulf Coast and Permian basins to northwest Australia.

✓ Global coverage of modern sediments.

The presentations were given at various conventions, international conferences, a Hedberg conference and Harris' Distinguished Lecture tour – and with them, Harris and his co-authors have made a singular contribution to applied geosciences that is reminiscent of the contributions Peter Vail and his co-workers made more than 30 years ago.

Harris is a carbonate reservoir consultant with Chevron Energy Technology Co. in San Ramon, Calif. His work over the past 30-plus years has centered on facies-related, stratigraphic and diagenetic problems that pertain to carbonate reservoirs and exploration plays in most carbonate basins worldwide.

He's the recipient of AAPG's Wallace E. Pratt Memorial Award, Robert H. Dott Sr. Memorial Award (twice) and AAPG Certificate of Merit, in addition to being an AAPG Distinguished Lecturer and honorary member of SEPM.

He also is on the adjunct faculty at Rice University, University of Miami and the University of Southern California.

His work – along with hundreds of others – can be accessed by going to www.searchanddiscovery.com. □

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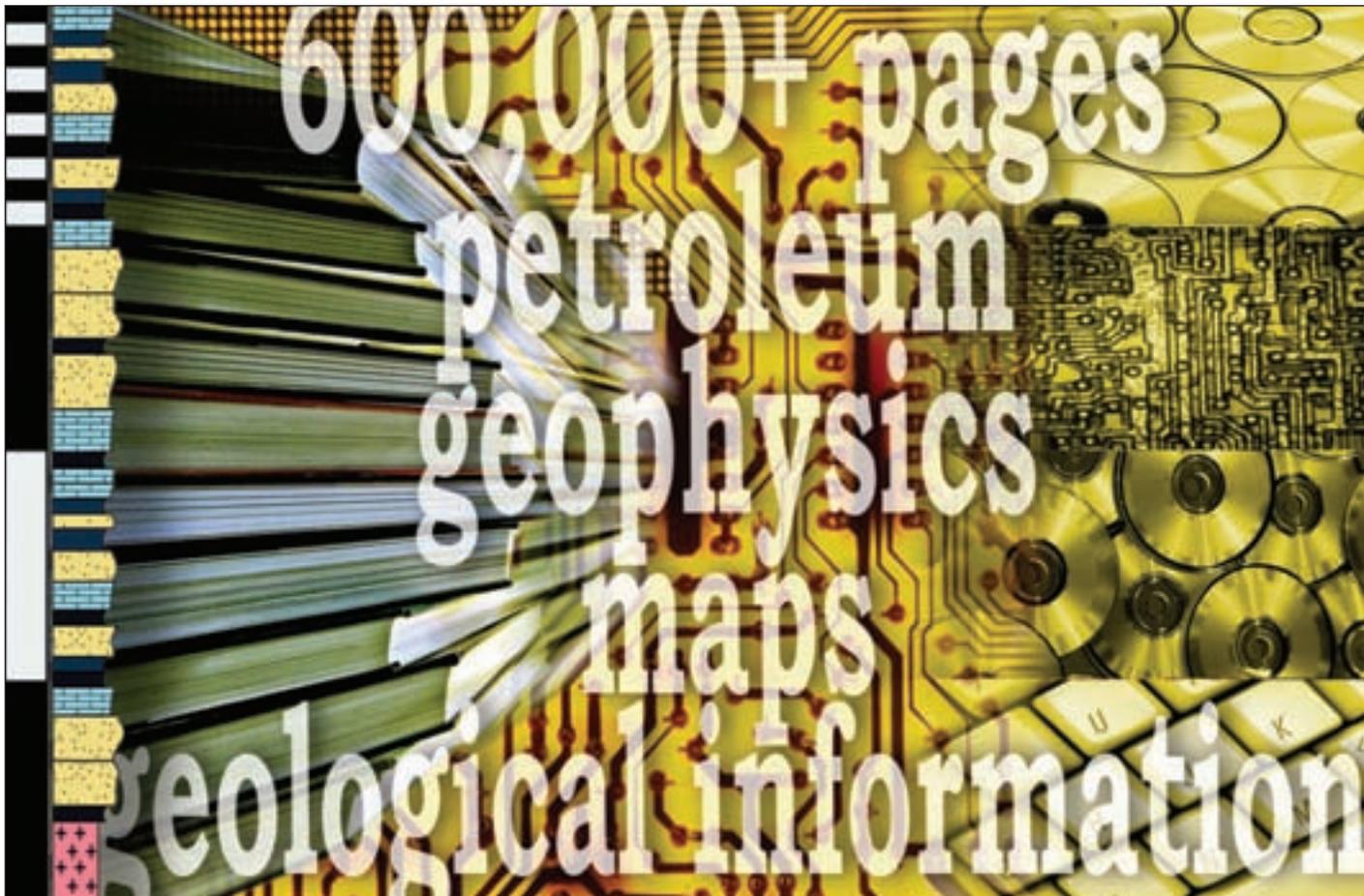
INmemory

- Douglas L. Bostwick, 78
Albuquerque, N.M.
Sept. 23, 2007
- Sally S. Brown, 67
Houston, Oct. 17, 2007
- William A. Clough (EM '49)
Englewood, Colo.
- Larry A. Constantine (AC '84)
Camarillo, Calif.
- Jack A. Crichton (AC '46)
Dallas
- Hewitt B. Fox, 85
Corpus Christi, Texas
May 23, 2008
- Hans R. Grunau, 88
Bern, Switzerland
July 11, 2008
- Jeffrey L. Liner, 54
Tulsa, July 14, 2008
- Keith A. Niskanen, 57
Mansfield, Ohio
June 26, 2008
- Bruce A. Thompson (AC '66)
Ellsworth, Ohio

(Editor's note: "In Memory" listings are based on information received from the AAPG membership department. Age at time of death, when known, is listed. When the member's date of death is unavailable, the person's membership classification and anniversary date are listed.)

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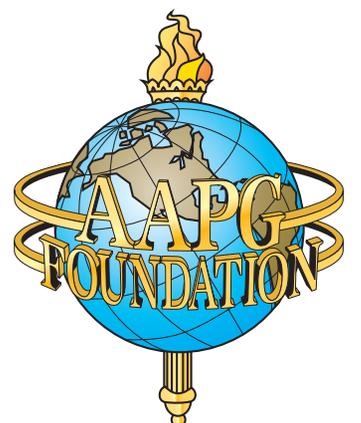
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Commentary

Book Tackles
Climate Issues

By LEE C. GERHARD

One of the most difficult tasks that scientists face is communicating their science to non-scientists who make decisions that are based on science.

Our difficulty in communicating energy and resource needs, processes and impacts to elected officials and the media have led to the present energy impasses – meaningless energy policies that have failed to increase supply.

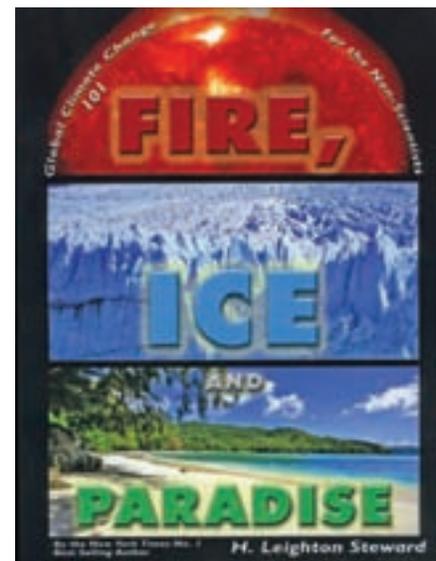
The current negative economic impact of high prices is one result, and lack of access to the resource base to increase supply is another.

Fortunately, there are a few members who have taken up the cause of public education about science and have invested not only their time but also their fortunes in providing materials to the public.

The latest in this chain of active and dedicated AAPG members is Leighton Steward, who has just published *Fire, Ice and Paradise*, a public-oriented science book that tackles climate change issues.

Steward, the 2001 recipient of the AAPG Public Service Award for efforts as an environmental activist, has mastered the public communications skill. Some may remember his wildly popular book *Sugar Busters!* of 1995, and its successor edition.

Steward, who is on the advisory board of Lamont-Dougherty Earth Observatory



at Columbia University and on the board of the Institute for the Study of Earth and Man at Southern Methodist University, constantly challenges accepted paradigms. None is more popularly accepted nor more subject to scientific challenge than the current concept that human energy use and carbon dioxide emissions are radically changing earth's climate.

continued on next page

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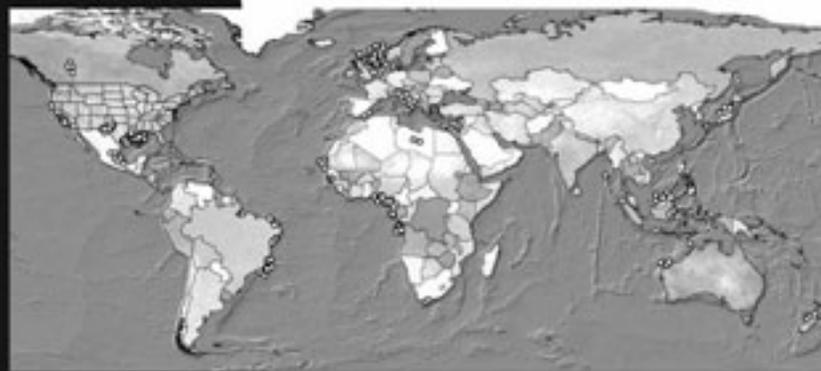
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Fire, Ice and Paradise articulates that challenge in language that high school students and the lay public can both understand and appreciate.

Although his primary topic is climate change, Steward takes the words and space to first address how science is done and to introduce the reader to geology, geologic time and the immensity of time over which climate has been changing. This book teaches more about geology and geologic thinking than many earth science textbooks – not in details, but in guiding principles directly related to the reader's life experiences. The reader, young or old, is forced to think about evolution and plate tectonics.

Once launched directly into climate change, Steward introduces the readers to the various natural processes that may

cause climate to vary, including an extensive treatment of greenhouse gases. He then meticulously analyzes each set of climate drivers, describing their relative importance, their effects and how they work.

Steward then details how geologists interpret past climate history, showing how the various lines of evidence work and how dependable they are. This segues into a concise discussion of climate change through time, giving the reader a framework against which to test and judge modern changes – and, incidentally, reinforcing the concepts of a very old and evolving Earth.

He then clearly identifies his own professional opinions, so that the reader is not lead to a conclusion but can contrast his or her own conclusions with those of the author.

Steward, an AAPG Foundation Trustee Associate and past CEO of Louisiana

Land and Exploration, has not only brought science to non-scientists, he provides a recommended reading list, index, glossary and cited references. His illustrations are sharp, to the point and easily understood by any reader.

An indication of the effectiveness of Steward's approach to communicating science to non-scientists is on the reaction of the non-scientist. I gave the book to a carpenter and home remodeler for a reaction. He said, "If you think you have an opinion on climate change, you better put it on hold until you read this book. This is great information. He makes science interesting and intelligible to we who are not scientists. His diagrams are easy to understand."

It is our responsibility to tell the story of natural resources to the public. We can't blame politicians for poor energy policy if we have not communicated the facts to them in words they can understand, and

in stories they will remember.

Why don't we do a better job? Perhaps we are too busy to bother. It is a very tough job translating our science into the words that non-geologists can appreciate. The magic of geology that makes geology majors out of freshmen in college is what we must communicate to others.

But if we don't bother, then we may not be too busy in the future. □

(Editor's note: Gerhard, a past Kansas state geologist and director of the Kansas Geological Society, is editor of AAPG Studies in Geology #47 Geological Perspectives of Global Climate Change, and will be speaking on that topic at a special dinner Oct. 21 in the Roswell, N.M., Convention Center, sponsored by the Roswell Geological Society, the New Mexico Landman's Association and the Desk and Derrick Club).

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- Carbonate Stratigrapher:** Ph.D. (preferred) or M.Sc.
- Mapping Geologist:** M.Sc. (preferred) or B.Sc.

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**TENURE-TRACK POSITION
IN EXPLORATION GEOPHYSICS
BOONE PICKENS SCHOOL OF GEOLOGY
OKLAHOMA STATE UNIVERSITY**

The Boone Pickens School of Geology at Oklahoma State University (OSU) invites applications and nominations for a geophysicist with strong research background to fill a tenured or tenure-track position in exploration geophysics at any rank (assistant, associate, or full professor). In addition, distinguished applicants with demonstrated international reputations, meeting the requirements for full professor will be considered for the Boone Pickens Chair of Exploration Geophysicist. Applicants are required to have a Ph.D. degree in geophysics or related field at the time of appointment.

The applicants should have a broad background in the geophysical sciences. Specific research areas may include, but are not restricted to seismology, seismic data processing and quantitative seismic analysis for reservoir characterization, reflection seismology, electromagnetic techniques, and ground penetrating radar. Applicants must have a strong research and publication record and a demonstrated ability to attract external funding. Salary and benefits will be competitive and commensurate with experience and future potential.

The successful candidate will be expected to pursue a vigorous research program and help strengthen our petroleum geosciences program. The candidate will supervise M.S. and Ph.D. students and develop courses in his or her specialty and participate in preparing students for employment in the energy and environmental industries.

The successful candidate will join a faculty of twelve geoscientists, including two other geophysicists, and will be part of a sedimentary geology and tectonics research group that include six other faculty and has close ties to the petroleum industry. The School of Geology has a well equipped geophysical laboratory with a Geometrics 48 channel seismograph, an Iris Syscalpro 10 channel resistivity system, an AGI Supersting resistivity system, a Scintrex C-G5 gravimeter, a Geometrics control source audio magnetelluric system (Stratagem), a Pulse Ekko GPR system, a Geonics EM-34 system, a Geometrics 858 Cs vapor magnetometer, and state of the art software for processing both potential field and seismic data. In addition the School has recently constructed the Devon Teaching and Research Laboratory, which contains state-of-the-art 3-D image processing facilities.

Applicants are encouraged to submit a complete vita/resume, statement of research and teaching interests, and a list of five references, including names,

phone numbers, e-mail addresses, and complete mailing addresses to: Geophysics Search, Boone Pickens School of Geology, 105 Noble Research Center, Oklahoma State University, Stillwater, Oklahoma 74078-3031. Phone: (405) 744-6358. Fax: (405) 744-7841. Screening of candidates will begin in November 2008 and will continue until the position is filled. The starting date for this position will be Fall Semester 2009 or as negotiated.

Inquires about this position may be directed to Dr. Estella Atekwana (estella.atekwana@okstate.edu) or Dr. Jay Gregg (jay.gregg@okstate.edu) at the above address. More information on OSU and the Boone Pickens School of Geology can be found on the web <http://osu.okstate.edu/> and <http://geology.okstate.edu/> respectively.

Committed to health and safety Oklahoma State University maintains a tobacco free work environment.

Oklahoma State University is an Affirmative Action/Equal Opportunity/E-Verify employer committed to diversity.

**U.S. Geological Survey Mendenhall
Postdoctoral Research Fellowship Program**

The U.S. Geological Survey (USGS) invites applications for the Mendenhall Postdoctoral Research Fellowship Program for Fiscal Year 2010. The Mendenhall Program provides opportunities to conduct research in association with selected members of the USGS professional staff. Through this Program the USGS will acquire current expertise in science to assist in implementation of the science strategy of its programs. Fiscal Year 2010 begins in October 2009.

Opportunities for research are available in a wide range of topics. The postdoctoral fellowships are 2-year appointments. The closing date for applications is November 12, 2008. Appointments will start October 2009 or later, depending on availability of funds. A description of the program, research opportunities, and the application process are available at <http://geology.usgs.gov/postdoc>. The U.S. Geological Survey is an equal opportunity employer.

**Chevron Energy Technology Company
Structural Geology Specialist**
www.chevron.apply2jobs.com

Chevron Energy Technology Company, headquartered in Houston, Texas, provides energy technology solutions and services to all Chevron operations and affiliates. Chevron is accepting online applications for the position of **Structural Geology**

continued on next page

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READERS'forum

The Anthropocene

Regarding your stories on the debate involving the naming of a new epoch – the Anthropocene – to acknowledge the impact humans have had on the planet (September EXPLORER):

I read the original article in *GSA Today* also and concluded the proposal was poorly founded. Both (Don) Owen and (Art) Donovan (the AAPG members on the North American Committee for Stratigraphic Nomenclature) have outlined cogent objections (no marine record; no magnetic event marker).

I would add no flooding surface, NO unconformity and no extinction event exist to justify this proposal.

I believe the stratigraphic code and multiple IUGS Commissions addressing boundary problems have developed critical criteria to define these time

Editor's note: Letters to the editor should include your name and address and should be mailed to Readers' Forum, c/o AAPG EXPLORER, P.O. Box 979, Tulsa, Okla. 74101, or fax (918) 560-2636; or e-mail to forum@aapg.org. Letters may be edited or held due to space restrictions.

stratigraphic units, and "Anthropocene" doesn't meet them. I'm left with the impression, perhaps mistaken, that this proposal originated with a group of PC academics who want to blame humans for all of the world's natural ills.

I strongly recommend that this proposal be rejected and it be rejected immediately.

George Devries Klein
Sugar Land, Texas

continued from previous page

Specialist, located in Houston, Texas or San Ramon, California with expertise in characterization of fractured reservoirs or research experience with natural fracture systems. The Structural Geology Specialist will be working closely with engineers and earth scientists in reservoir management.

The qualified individual will possess a Ph.D. in Structural Geology; have experience with fractured reservoirs or considerable field experience with natural fracture systems, the willingness to learn image-log interpretation tools and UNIX-based work station interpretation systems and applications and have broad-based, general knowledge of petroleum structural geology. We are looking for applicants who have the willingness to engage fracture interpretation of cores, ability to integrate work with all disciplines, especially reservoir engineering, and contribute to team dynamics. Familiarity with oil-field reservoir management and aptitude to transfer knowledge and skills is essential. For full position information and application procedures, visit our website at www.chevron.com or apply online at www.chevron.apply2jobs.com.

**Chevron Energy Technology Company
Trap and Seal Analyst**
www.chevron.apply2jobs.com

Chevron Energy Technology Company, headquartered in Houston, Texas, provides energy technology solutions and services to all Chevron operations and affiliates. Chevron is accepting online applications for the position of **Trap and Seal Analyst**, located in Houston, Texas. The Trap and Seal Team supports exploration and production projects throughout the corporation.

The qualified individual will possess a M.Sc. or Ph.D., preferably with a focus on structural geology, stratigraphy, basin analysis, or fluid flow. We are looking for applicants who have a minimum of 5 years of petroleum industry experience, including experience evaluating trap integrity, geologic risk and fault or top seals. The qualified applicant will have the ability to work independently and collaboratively with technical and operations teams and possess strong communication and presentation skills. This individual will have the opportunity to conduct independent

See **Classifieds**, next page

CALL FOR PAPERS

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59TH ANNUAL CONVENTION

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& THE GULF COAST SECTION OF SEPM

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The Shreveport Geological Society is proud to host the 2009 Annual Meeting for the GCAGS & GCSSEPM. We look forward to continuing the long tradition of presenting the best of the geosciences from the Gulf Coast. Our theme, 'A Fusion of Geology and Technology,' recognizes the fact that we work using tried and proven geological concepts, yet we are in the forefront of technological innovation. Our work is recorded for the worldwide geological community in our superior publication, the *Transactions*. We invite you to be a part of this process by submitting an abstract for an oral or poster presentation in Shreveport.

Proposed Technical Sessions:

- ◆ **Haynesville & Other Shale Plays – A Symposium**
- ◆ **The Wilcox – Outcrop to the Abyss**
- ◆ **Visualization & Interpretation of Geologic Systems**
- ◆ **Tight Gas Sand Development**
- ◆ **Environmental Geology & Hydrology**
- ◆ **Old Fields – Rejuvenation & Enhancement**
- ◆ **Salt Traps & Technology**
- ◆ **Global Change – Dealing with the Inevitable?**
- ◆ **Sea Level Change & Coastal Subsidence**
- ◆ **Peak Oil & Bridges to Sustainability**
- ◆ **Geology & Education – A Natural**
- ◆ **Seismic Applications in the Upper Gulf Coast**
- ◆ **Water Resources**

When & How to Submit:

Abstracts for oral and poster presentations may be submitted beginning November 1, 2008, but no later than **February 1, 2009**, by logging onto www.gcags2009.com. First drafts of full papers from selected presenters that will be included in the 2009 GCAGS *Transactions* volume must be submitted by April 1, 2009, with final manuscripts due June 1, 2009. Contact information for the technical session chairs, as well as instructions for authors for the 2009 *Transactions*, can be found at the GCAGS convention Website, www.gcags2009.com. For general questions on the technical program please contact Gary Hanson, 2009 GCAGS Technical Program Chairman. He may be contacted via email at ghanson@pilot.isus.edu.



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We have an opportunity for a PNG Exploration Manager to drive our exploration program across one of the world's most challenging fold belt terrains! Plus we have a need for Structural Geologists to assist with both exploration and development technical studies within this challenging arena.

Key accountabilities and objectives for the Exploration Manager position are:

- Management of an ongoing PNG exploration program covering PNG oil, gas and new business opportunities
- Refresh portfolio of opportunities and process for high grading selected prospects for drilling
- Deliver successful oil and gas discoveries.

We are looking for a proven oil finder with real hands-on, technical exploration experience in fold belts, ideally with exposure to complex JVP management.

Key accountabilities and objectives for the Structural Geologist positions are:

- A solid understanding and background in fold belt structural geology
- Knowledge of oil industry exploration well planning and reserves estimation techniques.

All positions are Sydney based and re-location provision and flexible engagement terms will be negotiated for the right candidates.

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Classifieds
from previous page

project work and consult with business unit personnel as well as evaluate and design new technology solutions. For full position information and application procedures, visit our website at www.chevron.com or apply online at www.chevron.apply2jobs.com.

**ASSISTANT PROFESSOR
SEDIMENTARY PETROLOGY/GEOCHEMISTRY
OR NEOTECTONICS**

The Boone Pickens School of Geology at Oklahoma State University (OSU) seeks applications for a tenure-track faculty position in either sedimentary petrology/geochemistry or neotectonics. The appointment will be at the assistant professor level and effective August 2009. The applicant is required to have a Ph.D. degree in geology or related field at the time of appointment. The applicant must show promise of an outstanding research program and be committed to excellence in teaching. The successful candidate will be expected to supervise M.S. and Ph.D. level graduate students and develop courses in his or her specialty. In addition they will participate in teaching introductory geology courses.

Candidates should submit a letter of application, including a discussion of research interests and approach to teaching, along with a curriculum vitae; academic transcripts; and the names, addresses, e-mail addresses, and phone numbers of three references to: Assistant Professor Position Search, Boone Pickens School of Geology, 105 Noble Research Center, Oklahoma State University, Stillwater, Oklahoma 74078-3031, Phone: (405)-744-6358, Fax: (405) 744-7841. Screening of Candidates will begin in January 2009 and continue until the position is filled.

More information on OSU and the Boone Pickens School of Geology can be found on the web <http://osu.okstate.edu> and <http://geology.okstate.edu> respectively. Inquiries about this position may be directed to Dr. Jay Gregg (jay.gregg@okstate.edu). Committed to health and safety Oklahoma State University maintains a tobacco free work environment. Oklahoma State University is an Affirmative Action/Equal Opportunity/E-Verify employer committed to diversity.

**Tenure-Track Faculty Positions in Sedimentary
Geology and Geologic Carbon Sequestration
Penn State**

The Department of Geosciences seeks to hire two tenure-track faculty members, one in the area of Sedimentary Systems and the other in Geologic Carbon Sequestration with a preferred starting date of July 1, 2009. Outstanding candidates who creatively apply theoretical, observational, and/or experimental approaches in their research are encouraged to apply. Applicants should have a doctoral degree in geosciences or related fields and a record of scholarship and potential for developing a vigorous externally funded research program at Penn State. They are expected to contribute to core teaching in geosciences and interdisciplinary teaching and research.

Geology of Sedimentary Systems

We seek an individual with broad interests in sedimentary geology and the expertise to interpret depositional environments, paleoclimates, sea level changes, and/or coastal evolution from sedimentary facies studies and stratigraphic architecture, and/or to reconstruct sedimentary basin evolution from facies patterns and stratigraphy. Particular consideration will be given to candidates who employ integrative approaches to understanding fundamental sedimentary processes ranging from pore to basin scale, including field-oriented approaches and physical or numerical modeling. Our preference is to make the appointment at the Assistant Professor level; however, outstanding candidates at higher ranks are encouraged to apply.

Geologic Carbon Sequestration

Areas of expertise to be considered include integration of geological, geochemical, and

geophysical data to analyze sequestration reservoirs, strategies, and impacts. This includes, but is not limited to, experimental and modeling expertise in formation evaluation, petrophysics, fluid mechanics, and/or kinetics or reactive transport considerations applied to water-rock-hydrocarbon-CO2 mixtures. Also desirable are candidates who investigate formation characteristics utilizing field data and/or imaging using three-dimensional seismic data analysis through time (4D) to unravel subsurface structure and the temporal evolution of reservoir fluids, stress state, and flow properties such as fracture density, porosity and permeability distribution. The Carbon Sequestration position is part of a large initiative to hire 24 new faculty members at the University to advance energy related research and educational activities under the umbrella of the Penn State Institutes of Energy and the Environment (PSIEE). We prefer to fill this position at the Assistant Professor level; however, outstanding candidates at higher ranks are encouraged to apply.

Review of applications will begin November 1, 2008 and will continue until a suitable candidate is found. Applications should include a complete vita, a statement outlining teaching and research interests, and names and addresses of four or more references. Send application materials to: Search Committee Chair, 503 Deike Building, The Pennsylvania State University, University Park, PA 16802.

We encourage applications from individuals of diverse backgrounds. For more information on the Department of Geosciences and PSIEE go to <http://www.geosc.psu.edu>, and <http://www.psiee.psu.edu>.

Penn State is committed to affirmative action, equal opportunity and the diversity of its workforce.

**MONTANA TECH
The University of Montana
GEO-ENERGY ENGINEERING**

The Department of Geological Engineering invites applications for a tenure-track position in Geo-Energy Engineering. The successful candidate will be expected to teach a wide variety of undergraduate and graduate-level courses related to Montana Tech's Geological, Geophysical, and Petroleum Engineering degree programs, which are accredited by ABET. Development of a funded program of research with publishable results is expected. Responsibilities also include student advising, recruiting, and industrial relations. The appointment will be at the rank of Assistant Professor, starting in January 2009. A Ph.D. or ABD in Geological, Energy, or Petroleum Engineering, or a closely related field, is required at the time of appointment. A PE license, or EIT certificate, and significant energy industry experience are preferred. Candidates must have excellent communications skills in both spoken and written English.

HYDROGEOLOGY

The Department of Geological Engineering invites applications for a tenure-track position in Hydrogeology. The successful candidate will be expected to teach a wide variety of undergraduate and graduate-level courses related to Montana Tech's Geological Engineering degree program, which is accredited by ABET. Development of a funded program of research with publishable results is expected. Responsibilities also include student advising and recruiting. The appointment will be at the rank of Assistant Professor, starting in January 2009. A Ph.D. in an appropriate field of engineering or earth science (at least one degree must be in a related engineering field) and experience in the use of ground water modeling code, such as MODFLOW, are required. A PE license, or EIT certificate, is preferred. Candidates must have excellent communications skills in both spoken and written English.

Applicants for these positions should send a resume, transcripts, a statement of teaching and research interests and the names, addresses, and telephone numbers of three professional references to Cathy Isakson, Montana Tech, 1300 West Park Street, Butte, Montana 59701.

Montana Tech promotes excellence through diversity and women and members of underrepresented groups are encouraged to apply.

continued on next page

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Application Form for the position of Assistant Professor, Sedimentary Petrology/Geochemistry or Neotectonics, Boone Pickens School of Geology, Oklahoma State University. The form includes fields for personal information, education, and references.

Application Form for the position of Assistant Professor, Geo-Energy Engineering, Montana Tech, The University of Montana. The form includes fields for personal information, education, and references.

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Graduate Research Assistantships
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The newly-formed Basin and Petroleum Systems Modeling group in the department of Geological and Environmental Sciences at Stanford University invites applications for Ph.D./M.S. research assistantships. Projects will combine modern quantitative computational modeling and stochastic simulations with geology, geochemistry and geophysics to address energy-focused research on sedimentary basins and petroleum systems. A background with interdisciplinary training in petroleum geology, chemistry, mathematics, or geophysics is desirable. Assistantships include a stipend, tuition, and health insurance. For further information see <http://pangea.stanford.edu/research/bpsm> or contact Prof. Steve Graham (sagraham@stanford.edu)

TEXAS A&M UNIVERSITY
Department of Geology & Geophysics
108 Halbouty, 3115 TAMU
College Station, Texas 77843 3115

Sedimentary Geology Two Faculty Positions

The Department of Geology and Geophysics at Texas A&M University invites applications for two tenure track faculty positions in sedimentary geology, broadly defined. Areas of interest include but are not limited to fundamental and applied problems in sedimentary processes ranging from pore to basin scale, depositional environments, sequence stratigraphy, basin architecture, sea level change and coastal evolution, and energy and natural resource science. At least one position will be offered to an individual working at the basin scale. We will consider applicants at all academic ranks. Successful applicants will be expected to develop and maintain vigorous, externally funded research programs and contribute to undergraduate and graduate teaching. We are a collaborative broad based department within the College of Geosciences, which includes the Departments of Oceanography, Atmospheric Science, Geography, and the Integrated Ocean Drilling Program. Opportunities for collaboration also exist within the Department of Petroleum Engineering. Interested candidates should submit electronic versions of a curriculum vita, statement of research interests and teaching philosophy, the names and email addresses of at least three references, and up to four reprints by email attachments, to the Chair of the Sedimentary Geology Search Committee, sedsearch@geo.tamu.edu. Screening of applications will begin October 31, 2008 and will continue until positions are filled. A Ph.D. is required at the time of employment. The Department of Geology and Geophysics (geoweb.tamu.edu) is part of the College of Geosciences, which also includes the Departments of Geography, Oceanography, and Atmospheric Sciences, Sea Grant, the Geochemical and Environmental Research Group (GERG), and the Integrated Ocean Drilling Program (IODP). Texas A&M University, a land, sea, and space grant university, is located in a metropolitan area with a dynamic and international community of 152,000 people. Texas A&M University is an affirmative action/equal opportunity

employer committed to excellence through the recruitment and retention of a diverse faculty and student body and compliance with the Americans with Disabilities Act. We encourage applications from minorities, women, veterans, and persons with disabilities. Texas A&M University also has a policy of being responsive to the needs of dual career partners (hr.tamu.edu/employment/dual_career.html).

Hires in Energy Geoscience
Jackson School of Geosciences
The University of Texas at Austin

The Jackson School of Geosciences is expanding its program in Energy Geoscience by seeking outstanding scientists able to collaborate across disciplines and having expertise in one of the two following fields:

- Rock mechanics or rock physics. This research could be applied to exploration and development of unconventional hydrocarbons, the role of fluids in natural rock deformation, or improving seismic modeling. Approaches include experimental determination of stress-strain relations, microacoustic properties of stressed rocks, or the relationship of rock properties to their seismic P- and S-wave response.
- Interpretive reflection seismology. This research on sedimentary basins at either basin-scale or reservoir-scale would use industry or academic 2D and 3D seismic data. We seek individuals to span the gap between detailed mapping of seismic data and theoretical analysis to improve understanding of reservoir systems or sedimentary basins and their hydrocarbon systems.

Appointments include both faculty and research scientists. However, we are particularly interested in those seeking research scientist positions in either the Bureau of Economic Geology or the Institute for Geophysics. For more information on the school and its hiring program, visit us online at www.jsg.utexas.edu/hiring.

A Ph.D. is required at the time of appointment. An application should note the title of the advertisement you are responding to and include a cover letter, CV, list of publications, list of references, statements of research and/or teaching interests, sent to Randal Okumura, Office of the Dean / Jackson School of Geosciences, The University of Texas at Austin / PO Box B, University Station / Austin, TX 78713 or jobs@jsg.utexas.edu.

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Institution: The Petroleum Institute (PI) was created in 2001 with the goal of establishing itself as a world-class institution in engineering education and research in areas of significance to the oil and gas and the broader energy industries. The PI's sponsors and affiliates include Abu Dhabi National Oil Company and four major international oil companies. The campus has modern instructional laboratories and classroom facilities and is now in the planning phase of three major research centers on its campus. The PI is affiliated with the Colorado School of Mines, the University of Maryland (College Park), and Leoben and Linz Universities. PI is in the process of developing future working relationships with other major universities and research institutions around the world to capitalize on joint research areas of interest. For additional information, please refer to the PI website: www.pi.ac.ae.

PETROLEUM GEOSCIENCES
ENGINEERING POSITIONS

The Petroleum Institute in Abu Dhabi is seeking applications in Petroleum Geosciences Engineering for the following positions:

- Program Director**
- Faculty at all levels**
- (Chaired and Distinguished Professor, Professor, Associate Professor, Assistant Professor)**
- Research Associate**
- Research Assistant**
- Lab Engineer**
- Post Doc Fellows**

Candidates are encouraged to submit applications at the earliest convenience. Review of applications begins upon receipt and positions remain open until successfully filled.

Details are available on PI-web site: <http://www.pi.ac.ae/jobs>



Production/Development Geologist

OMV New Zealand Limited, part of the worldwide OMV group, requires a Production/Development Geologist to be based in Wellington, New Zealand. This role, reporting to the Maari Asset Manager, will be directly responsible for all production and development geological activities of the company for the Maari Asset in the Taranaki Basin and will work closely with the existing technical team and Asset Co-ordinators to secure maximum value and optimum field exploitation. Applicants must have substantial recent experience as a Production/Development Geologist. Responsibilities and duties include:

- Build and populate geological models including the use of seismic attributes and stochastic modeling techniques
- Interpretation of wireline log data and detailed petrophysical reporting
- Participate in and co-ordinate appraisal and development well proposals
- Undertake the design of formation evaluation programs and routine and special core analysis

Applicants will possess a BSc/MSc in Geology and be able to work independently and within small technical teams – competency in some of the following software packages is required; Microsoft Office suite; Roxar RMS or Petrel; IESX, Petrosys or Geolog. Other expertise beneficial to the position would include practical experience as a Mud Logger and Wellsite Geologist.

Technical capabilities for this position are paramount, however the successful applicant will also have well developed communication and relationship skills and qualities.

This presents an excellent career opportunity to join OMV New Zealand Limited and be part of New Zealand's booming upstream oil and gas industry. An attractive remuneration package is available depending on experience.

Please contact Mike Duncan
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DIRECTOR'Scorner

Leadership Includes 'Giving Back'

By RICK FRITZ

One day while marching across the desert with his thirsty army, Alexander the Great was approached by a soldier who knelt on the ground and offered him a helmet full of water.

"Is there enough water for 10,000 thousand men?" Alexander inquired.

The soldier apologetically shook his head – whereupon Alexander poured the water on the ground.

This story or legend about Alexander exemplifies great leadership.

Of course, there are many definitions of leadership. My favorite is "one who is willing to serve – to give back." This definition exemplifies voluntary leadership in a not-for-profit association such as AAPG.

* * *

Each year AAPG invites many of its most active members and staff to meet at AAPG Leadership Days.

This year we met in mid-August in Tulsa at the Post Oak Lodge. Over 100 AAPG leaders attended the meeting plus a number of representatives for AAPG's sister societies.

The meeting is multi-purpose with opportunities for inspiration, training, introspection and for consideration of the future of our profession.

For inspiration this year we had two extraordinary speakers – Steve Inbusch with CIBC World Markets, who gave us a look at the "Unconventional Future from an Investor's Perspective," and AAPG member and former NASA astronaut Jim



Fritz

Reilly talked about "Exploring New Frontiers."

Both gave us the opportunity to look beyond the present and examine our future.

This year's Leadership Days' focus was on "science." AAPG's overarching strategic goal is to provide the best geoscience to our members, profession and the general public.

To that end we held several breakout sessions:

- ✓ The Quest for Ideas.
- ✓ 21st Century Publishing.
- ✓ Future Education.
- ✓ Do Rocks Matter?
- ✓ 21st Century Digits.

The first session was a key discussion on accessing the best research; it is critical to the health of the organization to search for and promote good research. In particular, these group members discussed ways to promote research at universities. AAPG is about to embark on a major fundraising effort to develop research funds through a new program called PetroGrant.

Sessions two and four were designed

AAPG's overarching strategic goal is to provide the best geoscience to our members, profession and the general public.

to analyze the future of AAPG publishing – especially digital publications.

Discussions ranged from developing the best publications to the best ways to disseminate the information.

AAPG members and the general public are increasingly accessing AAPG information via the Web and other digital formats. GIS – Geographic Information Systems – will be used more in the future to distribute AAPG data.

The future of AAPG professional development or "education" was discussed in session three. AAPG evaluates its programs every few years, and this year the decision was made to either divest or build up AAPG's education program. After consideration, AAPG has decided to develop a new education directorate to expand its educational offerings. This is key to building our professional development program worldwide through AAPG's global offices.

Group five participants discussed the state of the art in integration of rock data with logs, maps, seismic, etc. Rock training is increasingly important to

understand reservoirs in 3-D seismic analysis, and AAPG is trying to establish itself as a facilitator and broker of rock education through field trips, field camps, etc.

Another group was focused on the needs of students. This session was developed by AAPG student members, who offered many ideas on improved communication and relationship building.

One of the most important student recommendations was a discussion on the best methods to involve students in AAPG's committees.

* * *

Perhaps the most important purpose of Leadership Days is networking among members, sister society representatives and staff. This is a valuable aspect of AAPG's continued success.

If you would like more information about what happened at this year's Leadership Days, the notes are located on AAPG's Web page.

If you would like to be involved in AAPG leadership opportunities, just let us know.

We have enough water for at least 30,000 members.

Free to division members

DPA to Offer Online Ethics Courses

By RICK L. ERICKSEN
DPA President

I mentioned at the end of my previous column (July EXPLORER) that I would discuss the development of quasi-online ethics courses. The following is an informational update concerning the status of producing those courses.



Ericksen

Currently, two of the ethics courses are nearing completion and moving toward being produced for distribution after editorial review for content.

✓ One of the two courses nearing completion, **The Grey Scale of Ethics**, addresses the fact that varying circumstances can change the ethics of a decision, and it offers a method for making ethical decisions.

This presentation was offered as a short course by DPA Correlator editor Robert Shoup during the 2006 AAPG annual meeting.

✓ The second course is titled **The Ethics Storybooks with Tales from the Oil Patch**. It is a presentation by John Gibson that was originally videotaped by the DPA.

Gibson is executive chairman and chief executive officer of Paradigm. Previously he served as president of Halliburton Energy Services, where he

managed all of the company's energy related operations. Before serving as president, Gibson was CEO of Halliburton's Landmark Graphics Corp.

There also are two additional courses being researched and in development.

Overview of Ethics Courses/Presentations

✓ **Professional Development Hours (PDHs)** – Each ethics presentation lasts approximately one hour and will be certified by DPA to constitute 1.0 Professional Development Hour (PDH).

PDH units are utilized by most geology licensure/registration agencies in recording compliance with continuing education requirements.

✓ **Fees for courses** – DPA members will be able to obtain these courses as a membership benefit. For you, they will be free.

AAPG members who are *not* members of the DPA will be charged an anticipated fee of \$25.

For non-AAPG members the cost is anticipated to be \$35.

In all cases, if a CD is requested there will be a nominal charge to cover the cost of the CD and mailing.

✓ **Annual ethics requirements** – The offering of these ethics training presentations is a DPA function related to



promoting ethical professional practice. These ethics presentations are in response to membership requests that the Division provide ethics training that would comply with continuing education requirements to maintain state licenses held.

Additionally, the online courses will aid in the maintenance of the DPA's "Board Certified" designation, which also requires annual ethics training.

Both DPA Board Certification and several states (such as Texas) require at least one PDH each year in the area of professional ethics.

✓ **Taking the course** – Acquisition or purchase of the ethics presentations will be through the AAPG Bookstore. They will be available for download or delivered on a CD in a format that should be accessible on all computer platforms.

Access to the course will be limited to 14 days, which should be plenty of time

for the purchaser to go through the presentation at his/her own speed, eliminating the need to complete the course in one sitting.

Once completed and a short series of questions are answered a PDH certificate will be generated signifying completion of the course. This certificate can be used in reporting PDH requirements to state licensure boards or the DPA as related to the Board Certified Petroleum Geologist/Geophysicist designation.

* * *

From the Follow-Up File: I'm pleased to announce the new legislative tracking service is online and available to DPA members.

DPA members can access the service by simply:

✓ Logging on to the "Members Only" section of the DPA Web site.

✓ Once in the "Members Only" area click the "Legislative Activity" link.

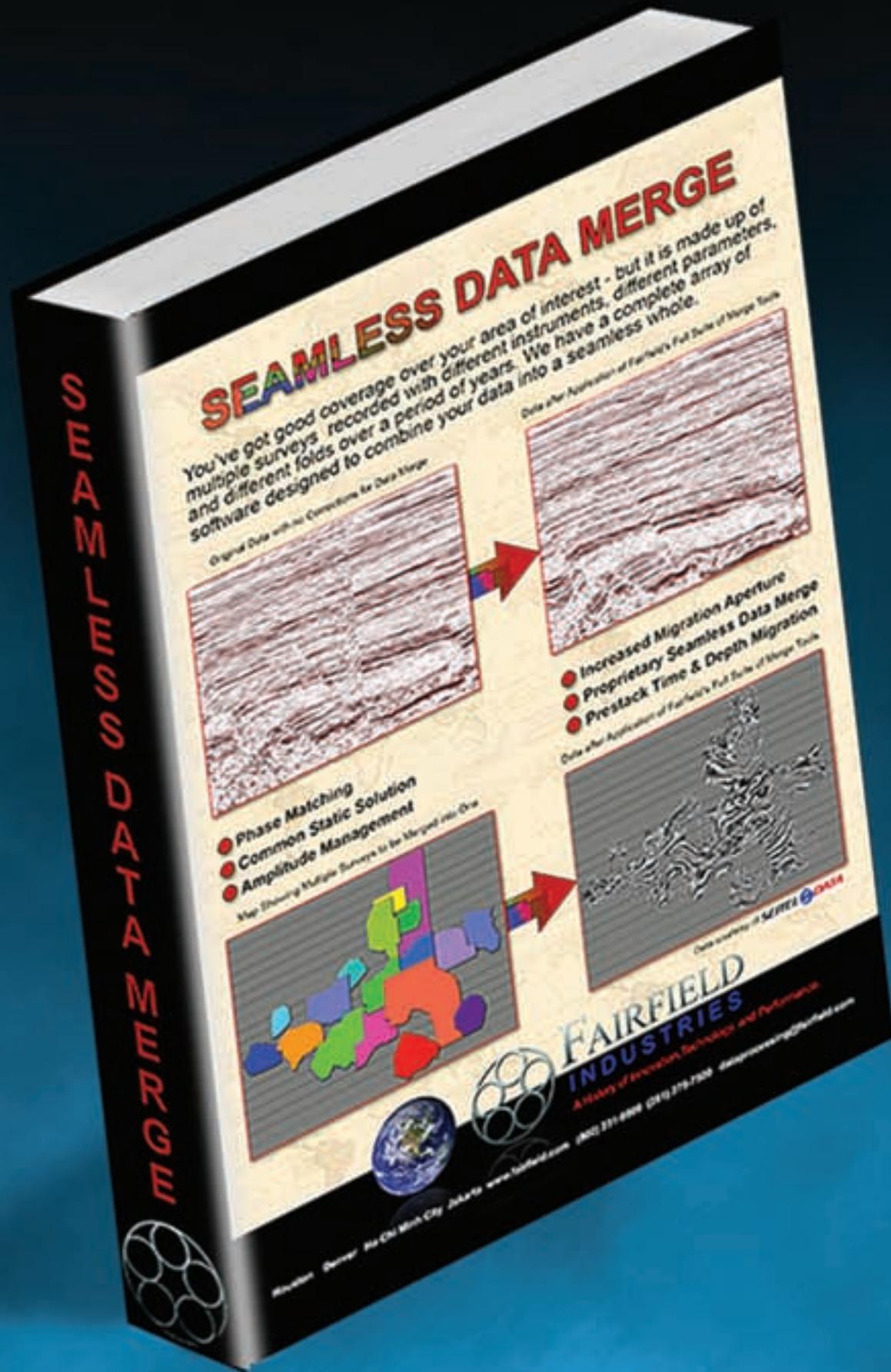
Here you'll find several predefined topics, i.e. geologist licensing, geophysics, mineral rights, geology, environmental geology, etc. By clicking on one of those topics you will see and be able to access all legislation that may be related to that topic.

As you explore this new service I think that you will agree this is a great addition and of value to interested DPA members.

Go take a look!

Until next time ... □

When it comes to seamless data merge...



We wrote the book.

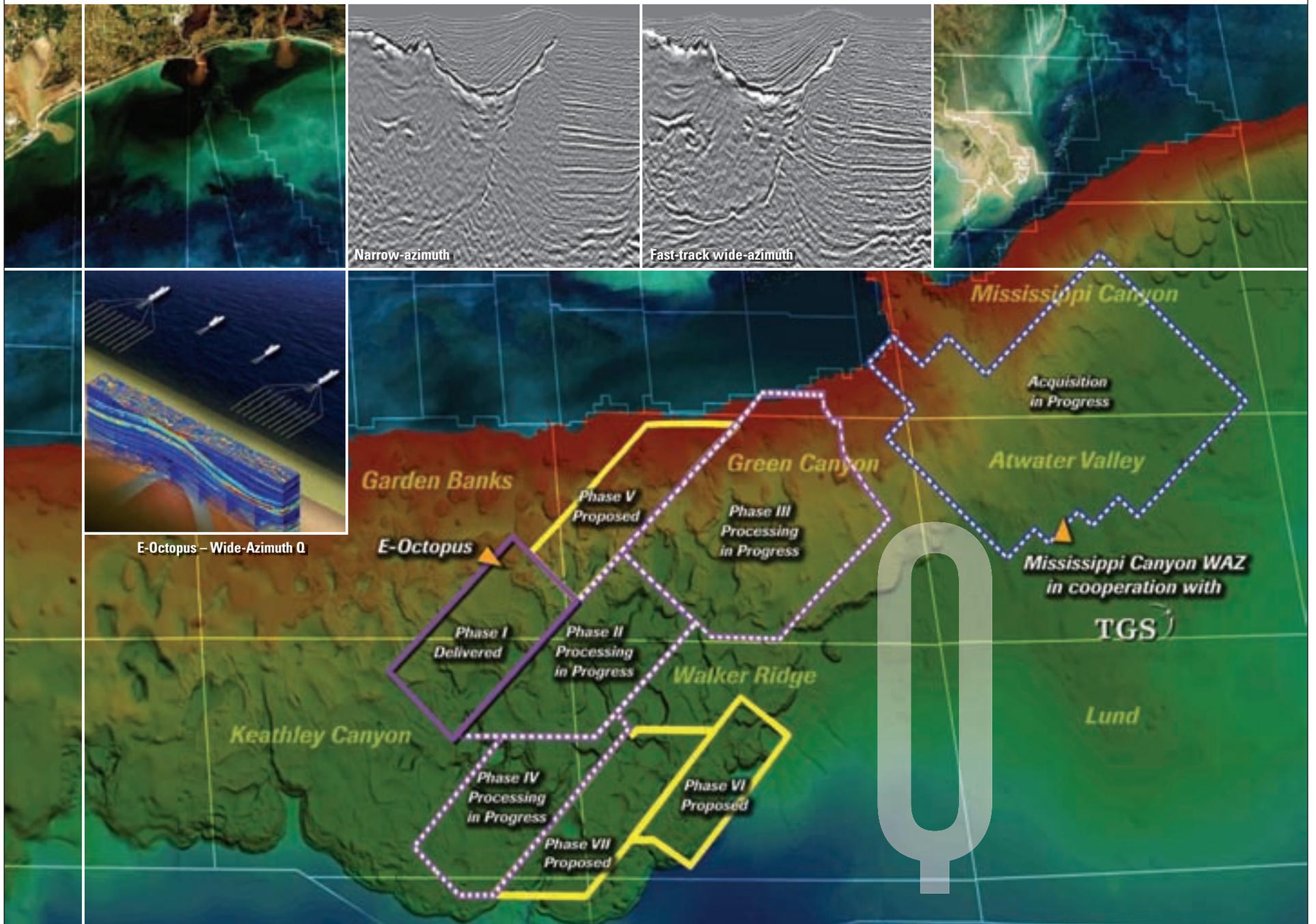


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