

AAPG AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, AN INTERNATIONAL ORGANIZATION

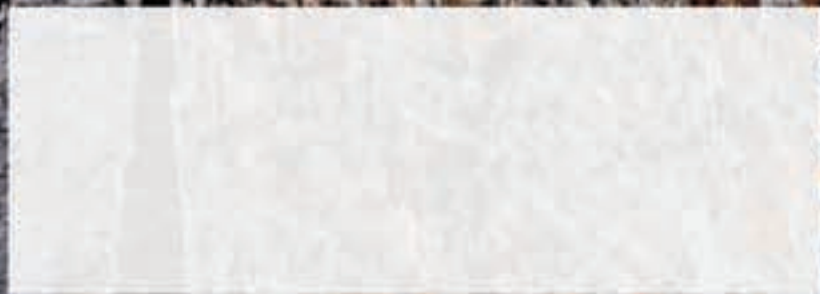
EXPLORER

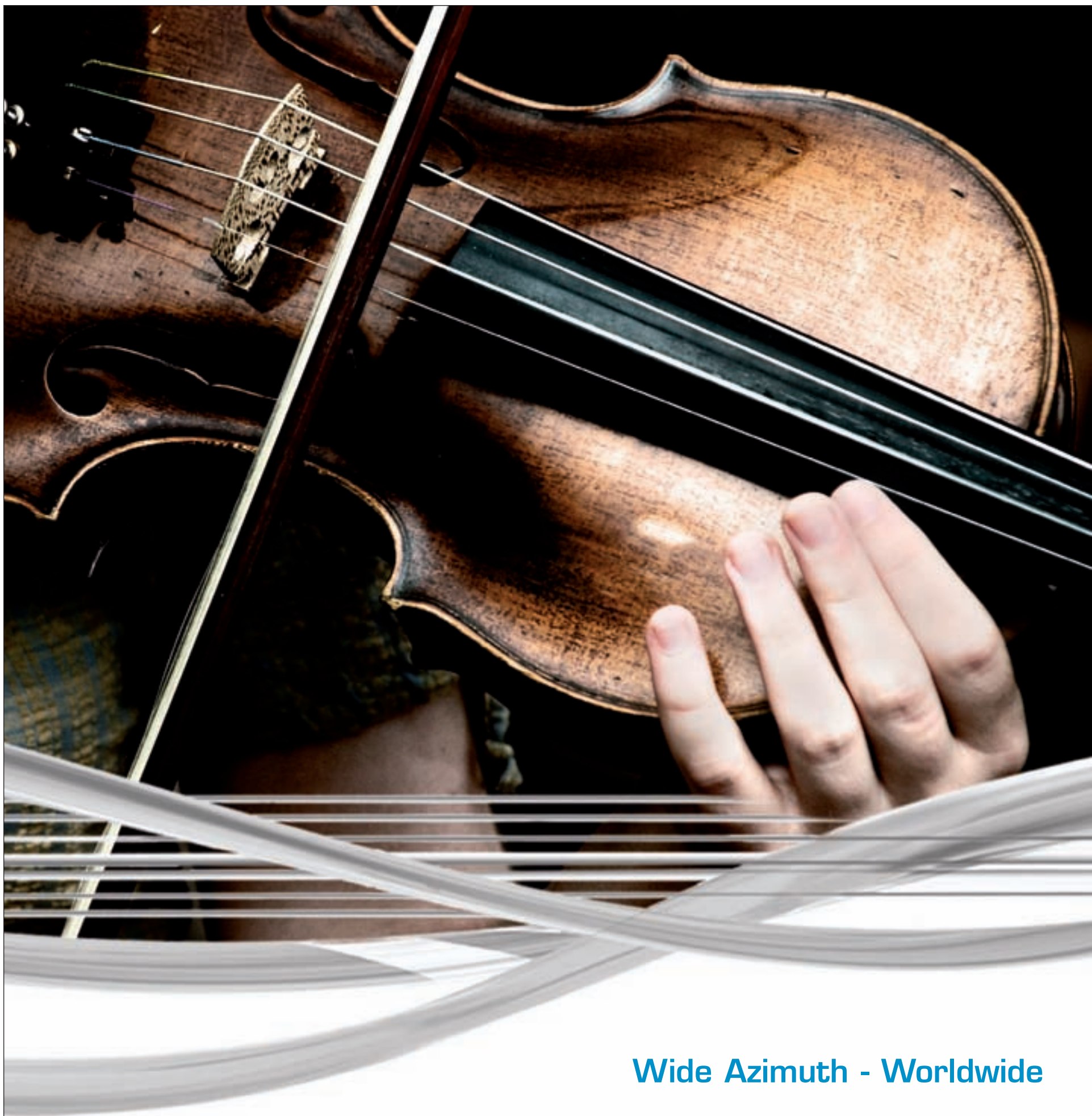
AUGUST 2008



Inspiration Point?

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On the cover: San Juan de Gaztelugatxe, a tiny island on the northern coast of Spain, provides many opportunities for inspiration; AAPG member Claudio Bartolini saw this and thought ... Mexican exploration? Read why on page 68. Photo by Bartolini.

CONTENTS

Good idea: How can companies foster innovation in their own organizations?	8
A mighty wind is blowing ... And Boone Pickens believes that his initiative to harness and use wind energy may be a way to transform the U.S. energy mix.	14
Out of Africa: Uganda's Albert Basin as well as other plays in the East Africa rift valley provides a demanding setting for frontier exploration.	16
Boldly going where none have ever dared – and getting others to take note of the effort – was just one challenge facing seismic teams working in Indonesia's deep waters .	20
Success stories may abound, but a lot of innovative thought already has been required for the complex Woodford Shale play in Oklahoma's Arkoma Basin.	26
A story to be shared: U.S. geologists may know all about the Fayetteville Shale , but the innovations that have helped bring success there are getting a global spotlight.	30
A team effort: A special research consortium has been formed to better understand the geology and potential of the Bakken Shale.	32
Back to school: AAPG's Visiting Geoscientist Program heads back to the classrooms with renewed energy and, better, a new organizational approach.	38
AAPG will make major inroads into a new region as a co-organizer of the upcoming GEO-India 2008 .	51

REGULAR departments

Geophysical Corner	42	www.Update	62
Washington Watch	44	Membership and Certification	64
Foundation Update	50	Education Update	67
Professional News Briefs	52	Readers' Forum	67
Meetings of Note	54	Classified Ads	69
Making a Difference	56	Director's Corner	70
Regions and Sections	60	EMD Column	70

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PRESIDENT'S column

When Questioned, Take It Personally

By SCOTT W. TINKER

In our business and in these times we are asked often, "Why is the price of gasoline so high?"

I was asked this question recently while testifying before seven U.S. senators in an "energy independence" forum in Washington, D.C. My response – "I don't think gasoline costs too much, nor can the U.S. be energy independent in the next quarter century" – was not particularly well received.

I went on to try to explain what is required to explore for and produce oil and to refine, transport and deliver it as gasoline for our cars. I compared it to bottled water being sold at \$1 or more per pint and Starbucks coffee at \$4 a cup (the "Grande" and "Venti" approaches \$6, my wife tells me.)

I also presented the data on U.S. oil and natural gas imports – approximately 60 percent and 20 percent, respectively – and how such a significant level of imports made energy independence difficult in the near term.

Still not very satisfactory to those before whom I was testifying.

* * *

We did not have time in the short Senate session to explore the underlying drivers of oil price, but I did so two weeks later in longer briefings to the U.S. House of Representatives. We discussed factors that impact oil price such as:

- ✓ Demand in Asia squeezing already tight global oil supplies.
- ✓ Lack of access to critical resources off U.S. coasts – and the message those moratoria send to world markets.
- ✓ The impact of speculation and hedging as a function of the weak U.S. dollar.
- ✓ The impact of the struggling U.S. economy.
- ✓ The lack of scalable liquid fuel alternatives.
- ✓ Weather, global warming and the huge potential cost of reducing CO₂ output to the atmosphere.

In addition, I presented the positively correlated relationships between energy consumption and per capita GDP in global economies and between sharp increases in oil price and U.S. recession, which have occurred at least three times in the past four decades.

During these exchanges it became apparent that U.S. and global energy policies, or the lack thereof, had perhaps led us to this energy juncture. It also became clear that America's favorite whipping boys, so called "Big Oil companies," which – combined – control less than 10 percent of global oil reserves (sounds sort of "small," doesn't it?), do not control the price of oil or gasoline. In fact, this is one of the ten "energy myths" that I discuss in various venues and that are synthesized in a table later in this issue (see page 66).

I may not be invited back to the hallowed halls of Congress!

Kidding aside, many did say they appreciated the fact-based approach



Tinker

and my willingness to speak candidly, even if what I had to say was unpopular.

These visits to Washington, and the speaking I do around the United States and the world, serve to reinforce in my mind the very strong link between energy and the economy, and the need for good information.

* * *

In my initial column in July I discussed several "bridges" in which AAPG can play a lead or supporting

These visits to Washington, D.C. ... serve to reinforce the need for good information.

role; none is more fundamental than the bridge linking energy and the economy.

Modern economies are powered by reliable, affordable energy; energy is required for economic growth and health. Oil and natural gas satisfy over 60 percent of global energy demand.

This fact – and the massive investment and infrastructure required to transition to other energy alternatives – seems to get lost in some of the well-intentioned, albeit somewhat naive, political discourse today.

The world has been transitioning – very slowly – to non-carbon energies, and as that transition continues over the next many decades we must maintain robust supplies of fossil energy as a stable bridge to the future.

Thus, the work we do as energy corporations and as professional members of AAPG is vital to global economic health.

* * *

The next time you meet someone for the first time and are asked, "What do you do?" don't be shy or embarrassed. Tell them you are in the oil and gas business. Let them know what that really means.

Tear down the walls of misconception. Put a human face on the enterprise that is so critical to our global energy and economic future!

We are the bridge.

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Candidates Have Web Presence

Biographies and individual information for AAPG officer candidates for the 2009-10 term will be available online at www.aapg.org in mid-August.

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. ☐

Preparations Begin for ESW

It's time to get prepared for the eleventh annual Earth Science Week, which will be celebrated Oct. 14-20.

"No Child Left Inside," the theme of Earth Science Week 2008, will encourage young people to learn about the geosciences by getting away from the television, off the computer and out the doors.

The objectives are:

✓ To engage students in discovering the Earth sciences.

✓ To remind people that earth science is all around us.

✓ To encourage earth stewardship through understanding.

✓ To motivate geoscientists to share their knowledge and enthusiasm about the Earth.

The American Geological Institute

organizes the event for the geosciences community and publicizes the event, distributes materials and provides guidance to those interested in participating in Earth Science Week.

Earth Science Week is a "grass roots" effort that depends on local geosciences and education groups to plan those events.

To promote the celebrations, a poster about the event is inserted in North American issues of this EXPLORER, courtesy of the AAPG Foundation. It can be found inserted between pages 16-17.

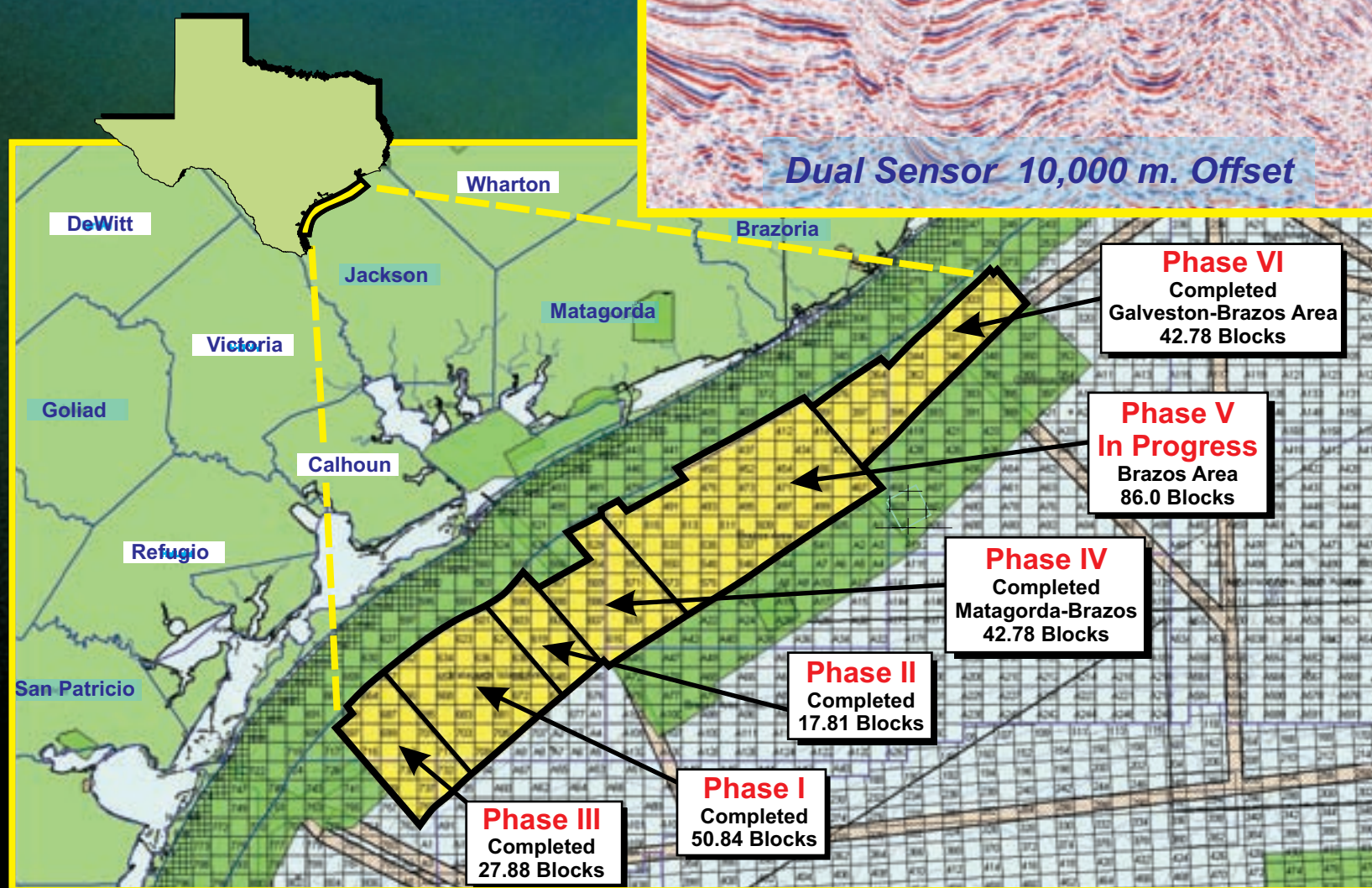
Members are asked to post or share the posters appropriately.

To become involved in Earth Science Week see the Web site at www.earthsciweek.org. ☐

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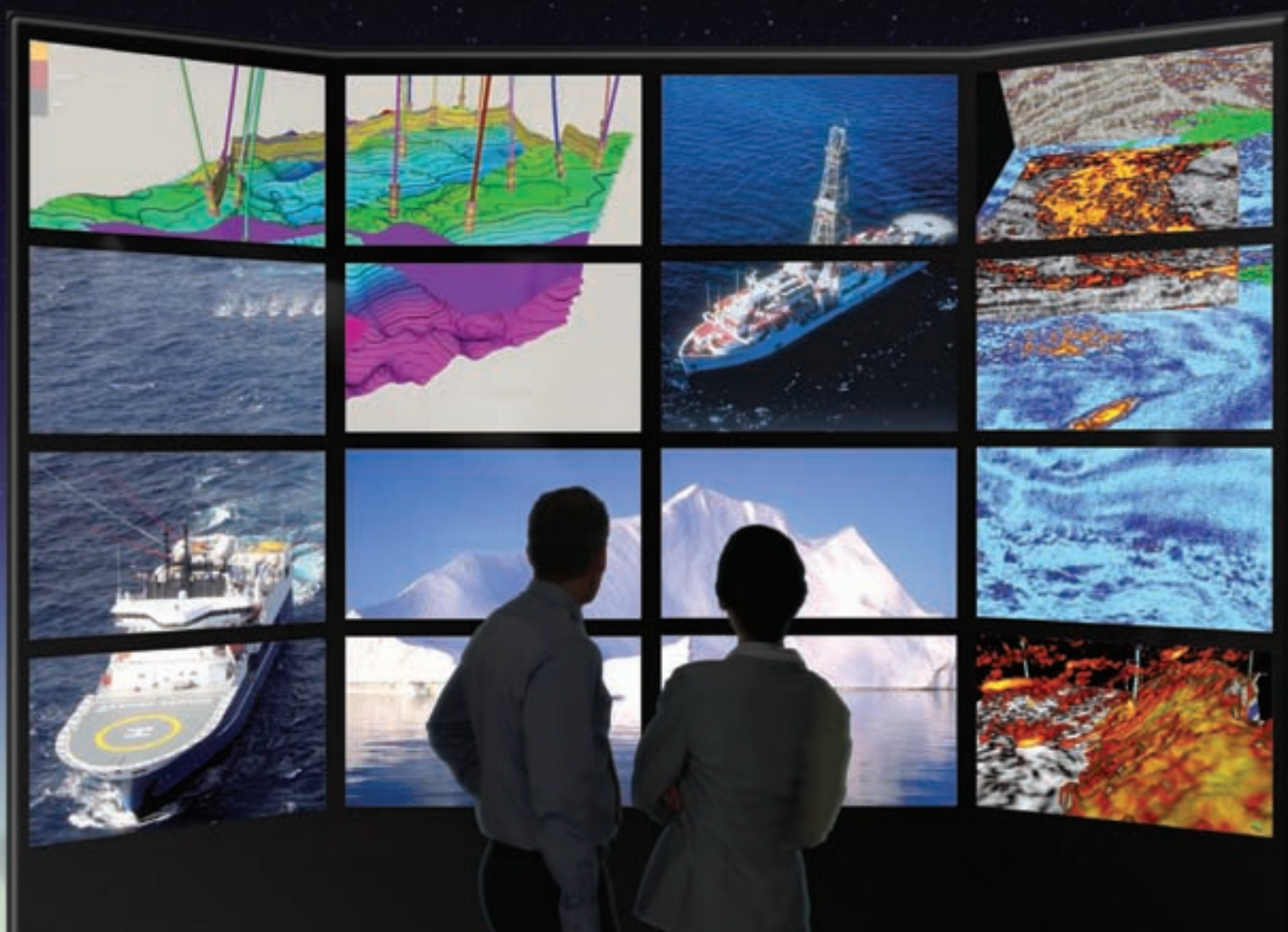
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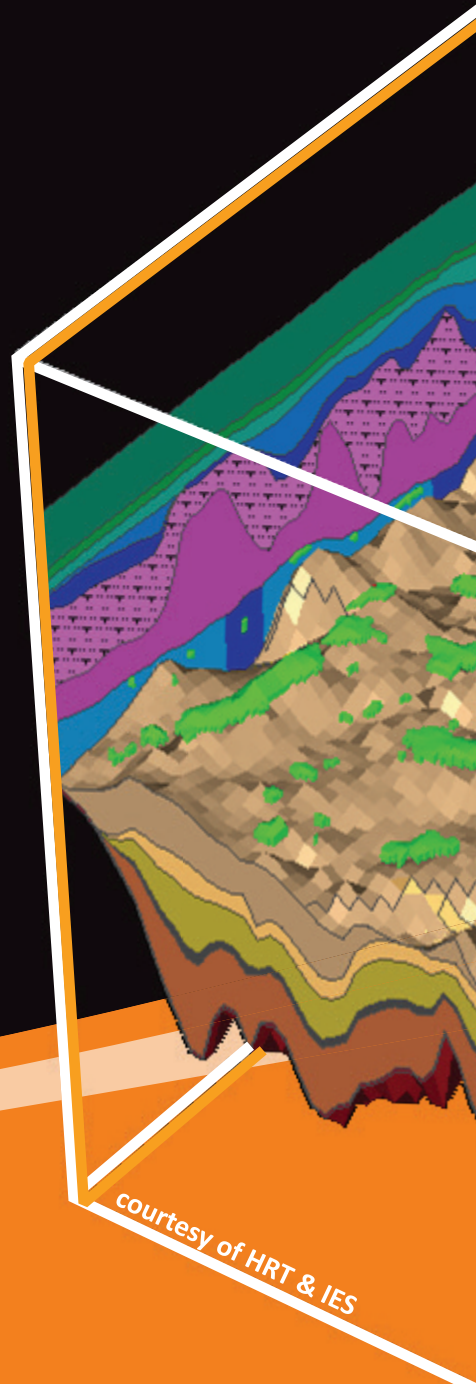
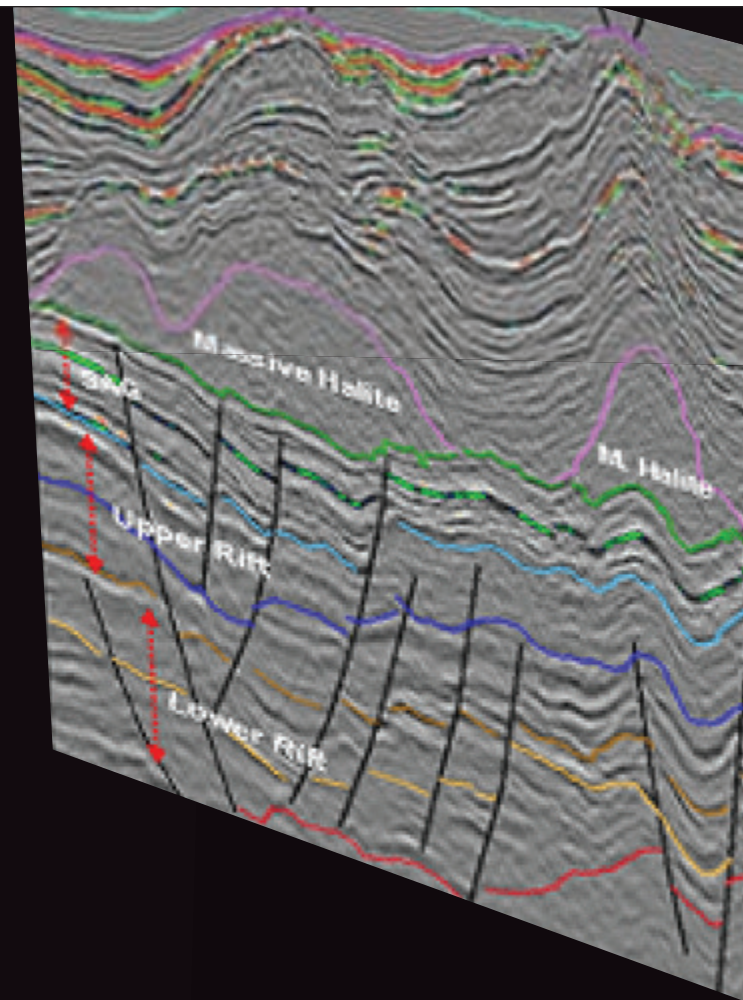
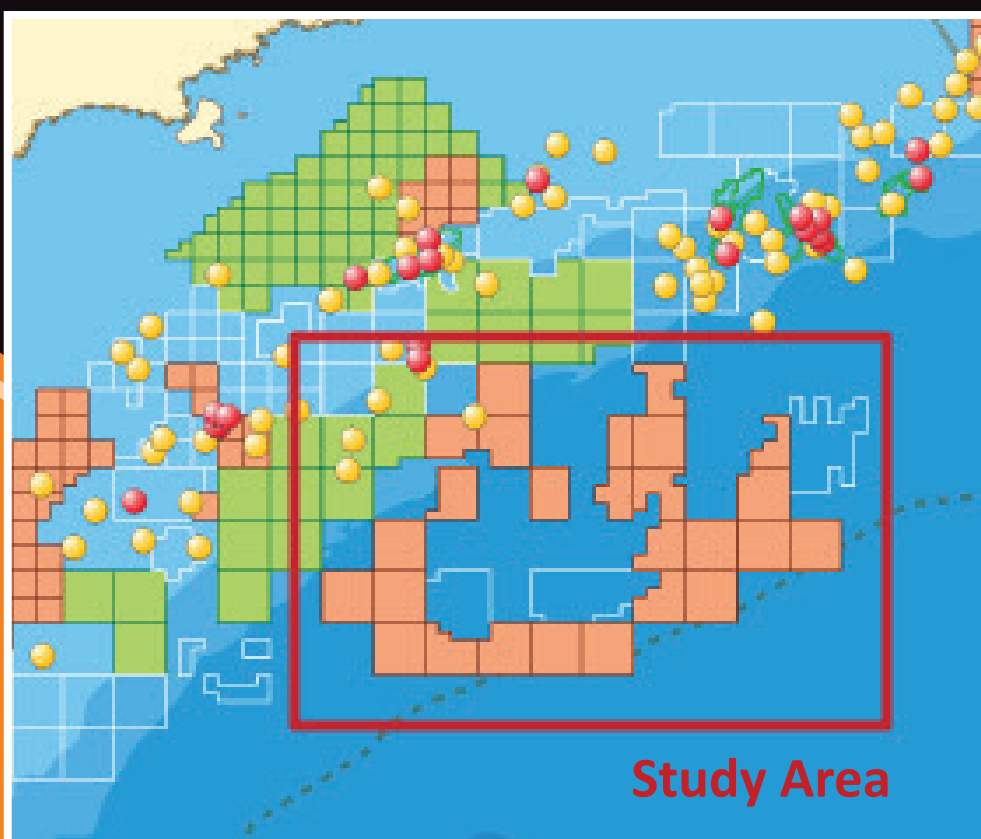


Schlumberger

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HRT Petroleum and CGGVeritas announce the most complete 3D Petroleum System Modeling of the Cluster Area in the Pre-Salt Domain in the Santos Basin - Brazil

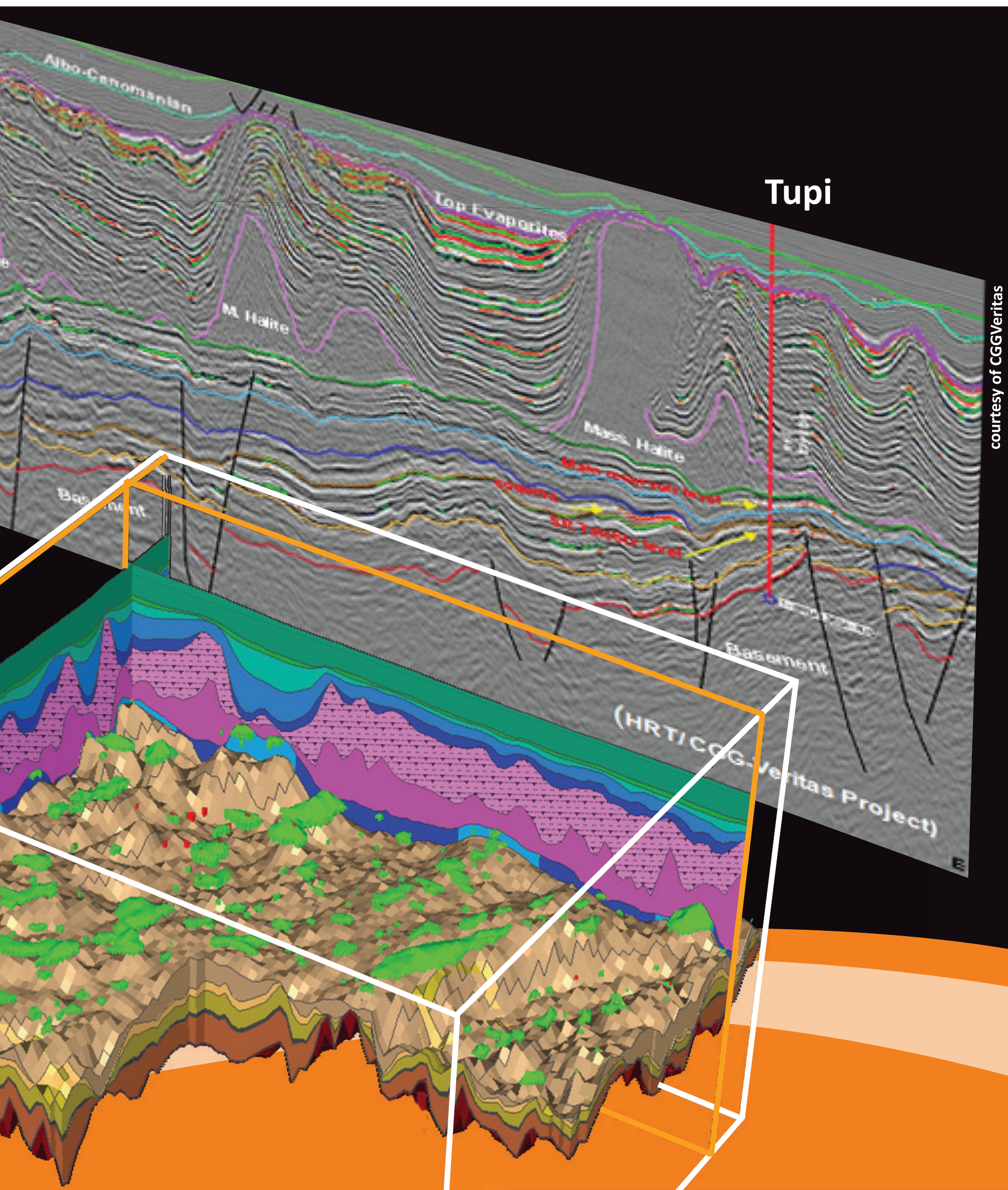
The study is built using the best 3D Seismic Survey ever acquired in deepwater by CGGVeritas in Brazil.



courtesy of HRT & IES

the petroleum system experts





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Too busy to think?

Wanted: Creativity, Innovation

By DAVID BROWN
EXPLORER Correspondent

For an industry built on innovation, future innovation will be more important than ever.

Meeting the world's need for energy could become the biggest global challenge of the 21st century.

Innovating to meet that challenge won't be easy. People in the oil and gas industry today are almost too busy to think, much less think outside the box.

And industry consolidation has produced a leading echelon of huge companies, often made up of tens of thousands of employees, with any number of languages and cultures.

"We realized several years ago that as big as we were getting, we needed to make an effort to ensure that we were as innovative as we were when we were a smaller company," said AAPG member Rod Nelson, vice president-innovation and collaboration for Schlumberger in Houston.



Nelson

That's easier thought than done in any organization. Companies have to make a serious effort to foster, capture and nurture innovative thinking if they want improvement.

"You can't snap your fingers and say, '80,000 people are going to be more innovative overnight,'" Nelson noted.

There's also a serious side effect to not enabling innovation.

Companies run the risk of discouraging innovative thinking when they don't support new ideas – or acknowledge new ideas at all.

"In some companies, when people give an idea or make a suggestion they never hear about what happened to it. It sort of falls into a black hole," said Kevin Paylow, innovation and commercialization leader-Baroid Fluid Services for Halliburton in Houston.



Paylow

"What we've found is that the most energetic, creative people will feel it's just a waste of time and stop doing it," he said. "They'll stop sharing those ideas."

How can companies foster innovation in their own organizations?

Here are a half-dozen suggestions:

✓ **Have a formal, recognized path for innovative suggestions.**

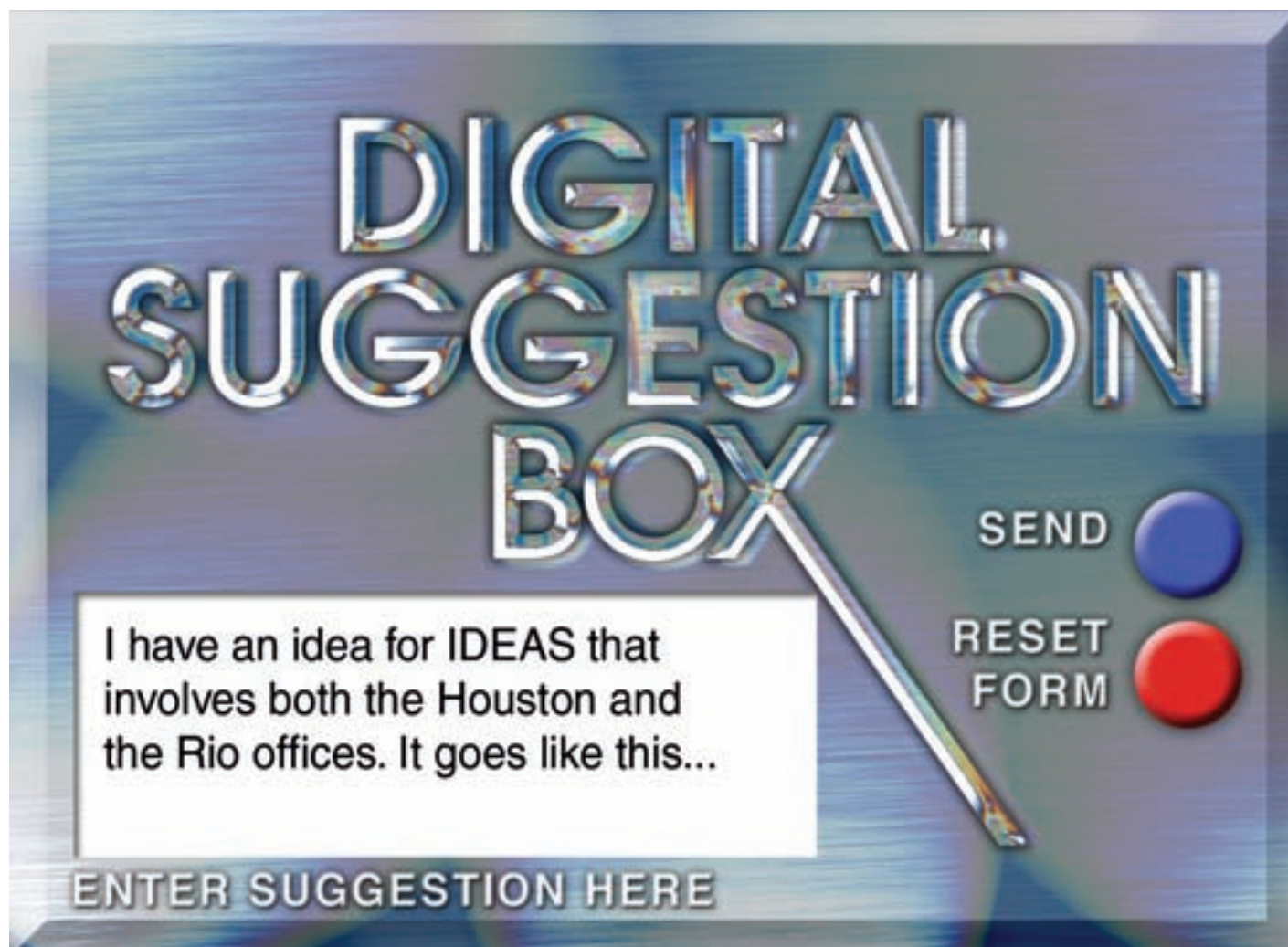
So, your company has a suggestion box? People need to know what happens to their suggestions out-of-the-box.

Both Schlumberger and Halliburton have a process for accepting ideas online and evaluating their potential. At Schlumberger it's called "Mariner," and it accepts online suggestions from employees everywhere.

"The strength of it is that anybody anywhere in the world can put in an idea," Nelson said.

Although idea evaluation varies by product line in Halliburton, the company does have an online resource for submitting innovative suggestions, according to Paylow.

"At Halliburton we have a system



called IDEAS – that's the Innovation, Description and Economic Assessment System. It's more or less an online idea collection tool," he said.

Then, when a formal process is in place, make sure there's also enough flexibility to develop ideas outside the system.

"Part of it is having a process, and part of it is allowing things to happen outside that process," Nelson said.

✓ **Set up an effective suggestion-evaluation system.**

At Halliburton the screening is a two-step process, Paylow said.

"In Phase One it's a small team. We have an objective scorecard. Is it a strategic fit? Does it create value for the customer? Does it create value for Halliburton?" he said.

"What we've found is that about half the ideas get knocked out at that stage," he added.

In the next step, a cross-functional team of Halliburton people with different expertise and backgrounds review the surviving ideas and recommend action.

"We come in once a quarter and spend a full day reviewing the ideas that made it past the first stage," Paylow said. "The goal here is to try to get diverse review."

Schlumberger also has a standard

Most of the big innovations have happened when people of very different backgrounds have come together to discuss a common problem to tackle a challenge.

process for evaluating innovative business suggestions, according to Nelson.

"We have what's almost like a venture capital committee made up of senior technical people," he said.

Evaluation time shouldn't be a burden, and it might turn out to have added benefits.

"The team that we put together was so excited after the first one that every single one of them committed to coming back and doing it again. They committed and we had fun doing it," Paylow explained.

"So those folks on the 'phase two' review become ambassadors to the organization, where they're pushing their colleagues and their peers and employees and bosses to participate in the process," he added.

✓ **Actively encourage and support innovative thinking.**

Some organizations see innovation as inefficient and risky. They're right on both counts; companies have to make room for innovation and support it in order to progress.

At the same time, individuals have to understand the need for innovation-producing ideas should be part of the assignment.

"People are busy," Nelson said. "I think left alone, a lot of people's tendency

is to just do their job. To be innovative almost by definition is to take a risk that might not work.

"Individuals have a responsibility to look for ideas outside their own little corner of action," he added.

Introducing an innovative environment likely will be a gradual effort.

Don't be discouraged if the going is slow, especially at first.

"Even in the last year the demands on people's time have gone up, which I wouldn't have thought possible a year ago," Paylow noted. "It's difficult to get people engaged in any new process or initiative."

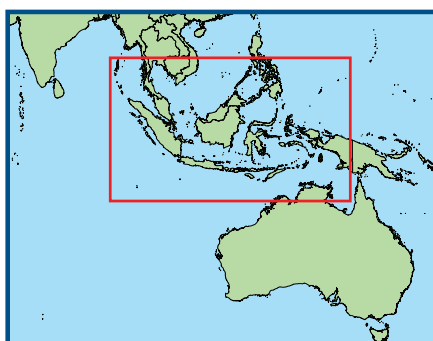
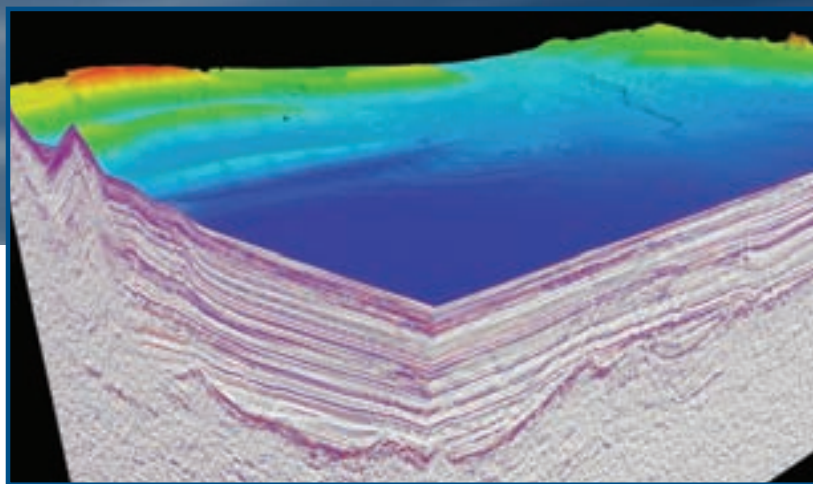
Having a formal suggestion-gathering and evaluation system helps people understand that a company values innovative ideas. Communication and feedback are essential.

"We're trying to make it much more transparent," he added, "so people can see when they put something in it could really have an impact, that it gets consideration in a fair and consistent manner."

✓ **Draw on the power of groups for creative breakthroughs and concept assessment.**

See **Innovations**, page 12

Indonesia Frontier Basins



Non-Exclusive Surveys

TGS has completed acquisition of a series of non-exclusive geoscientific surveys across Indonesia's under-explored frontier basins. A variety of data has been acquired to conduct a comprehensive prospectively analysis over an area of around one million square kilometres. The studies include:

- 34,000 kilometers new 2D seismic data
- 400,000 square kilometers of multibeam data
- 110,000 km of gravity and magnetics
- 1,200 sediment cores
- 3,600 geochemical analyses
- 100 heat flow probes

Gravity and magnetic data provides valuable information on the tectonic fabric and basement architecture of the basins. Seismic data provides structural mapping capabilities. Multibeam data provides a high-resolution view of seafloor topography to be used to detect hydrocarbon seeps. Sediment cores, geochemical analyses and heat probe tests are used to evaluate petroleum systems within the frontier basins.

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Thinking outside the Shell

Why Do We Care Whose Idea It Is?

Like many other large companies, Shell has an online resource where people can submit innovative ideas.

It's called GameChanger, and its introductory Web page can be found at: <http://www.shell.com/GameChanger>.

But, unlike other companies, Shell accepts ideas from anyone and uses a venture capital-like approach for development.

"GameChanger is not a suggestion system. It's a place where people can come with ideas seeking the resources to develop them," said Russ Conser, manager-GameChanger for Shell International Exploration and Production Co. in Houston.

An innovation submitted to GameChanger is screened and – if accepted – gets support for a proof-of-concept process, according to Conser.

If the idea proves viable it then goes through another screening process, where approval wins it funding for development.

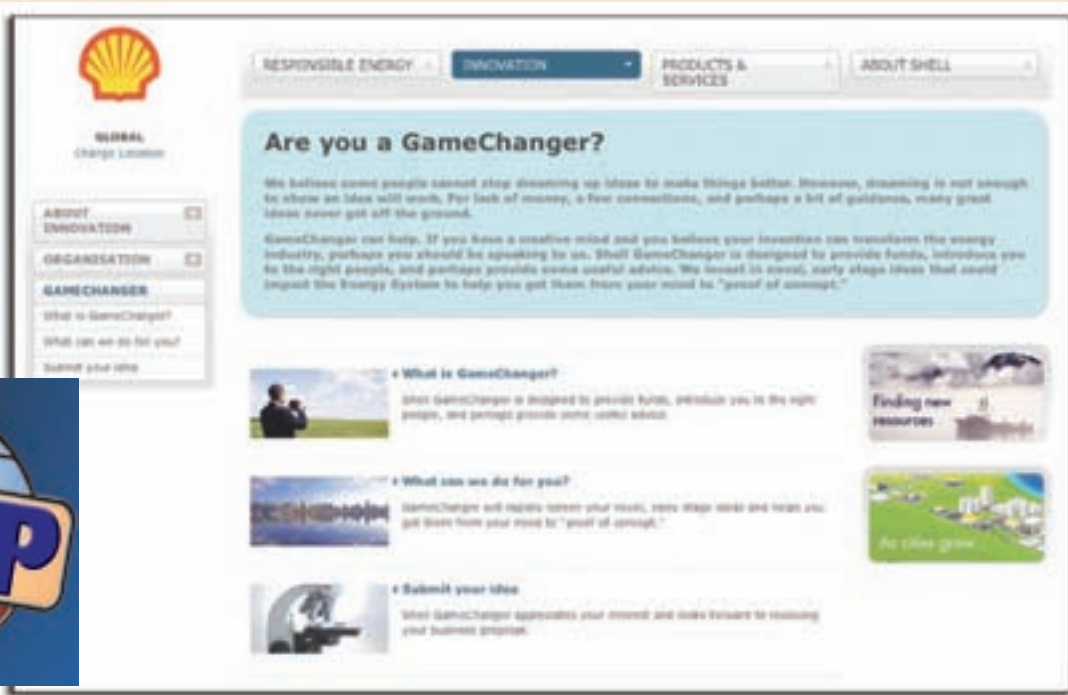
A key requirement is that any externally submitted idea has to have an internal Shell person involved as a "champion" for that innovation.

"Their interest has to rise to a level where they want to work with this person outside the company," Conser said.

"One of the ways you can tell good ideas is that people want to work with them," he said, "and you can tell bad ideas if people run away from them."

The basic idea for GameChanger was developed in 1996-97 by Tim Warren, then Shell's R&D chief, and business professor Gary Hamel. At that time

At Shell, the GameChanger is a place where people can come with ideas seeking the resources to develop them – and the company says this is a good way to encourage and nurture innovation.



funding for outside research was drying up and Shell's own research had to become more focused, Conser said.

Hamel is a consultant and author who's known for co-originating the concept of "core competencies."

"They designed the process we still use today," Conser said.

Shell employees also can submit ideas for GameChanger, but at any one time about 70 percent of the project portfolio involves material collaboration with people

outside Shell, Conser noted. More than half of those people are typically in universities.

"It was originally created with the model that it was a place where Shell people could send in ideas," Conser said. "About five years after it started the light went on: 'Why do we care whose idea it is?'"

The fruition time for developing an innovation averages about 24 months from start to finish, but can run anywhere

from six months to three years, he said.

Shell has a team of 11 GameChangers, managed by Conser, who draw on expertise from other places inside the company to assess and help develop submitted ideas.

Conser considers himself lucky to be on innovation's front edge.

"I get to hear the most interesting ideas from the most interesting people," he said. "I feel really fortunate."

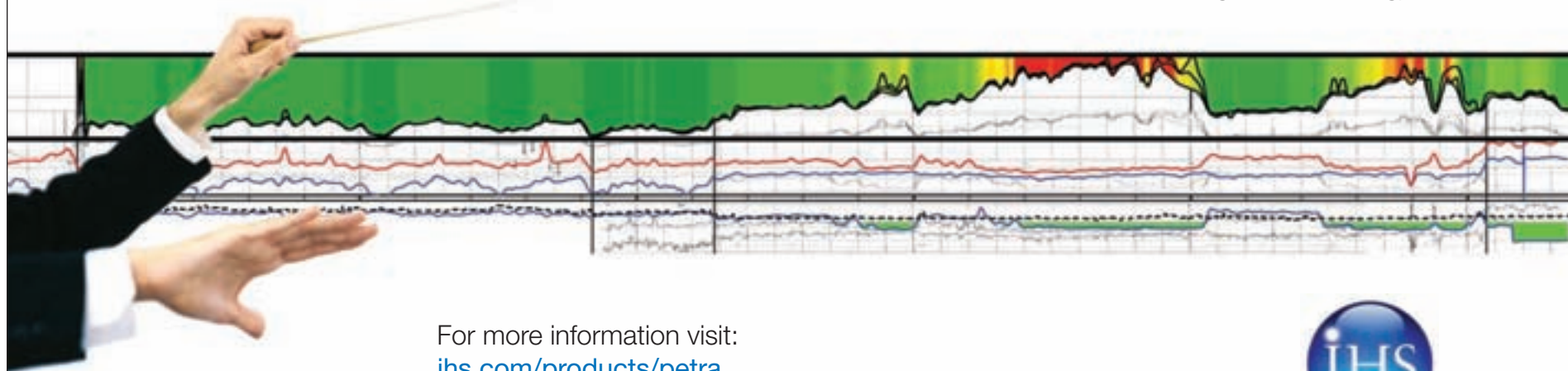
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*Patent pending

Innovations

from page 8

The oil and gas industry long ago figured out the value of teams from different functional areas dedicated to exploration and production projects.

That kind of group effort works for innovation, too.

When you look at the history of the industry, "most of the big innovations have happened when people of very different backgrounds have come together to discuss a common problem to tackle a challenge," Nelson noted.

In that regard, the large size and diverse cultural mix of some companies doesn't have to be a handicap.

"That's actually an advantage from our point of view, because you've got a lot of people from different backgrounds with different perspectives coming together to discuss problems," Nelson said.

Paylow has written papers and made presentations about tapping into the creativity of the group. He said the idea came from concepts in the book *The Wisdom of Crowds*, by James Surowiecki.

"A diverse population can almost always come up with better solution than a small group of experts or an individual, over time," he said. "The group consensus comes to a better decision or resolution when you average out their recommendations."

That approach has led Halliburton to try to engage many people in developing, assessing and adopting new ideas, according to Paylow.

"Rather than just trying to collect ideas from individuals and push them through the product pipeline, whenever possible let's take those ideas and push them out to the wider employee base," he said.



✓ Collaborate and look for ideas outside the company – or even the industry.

Schlumberger takes a two-part approach to collaborating for innovation, Nelson said.

"One part of it is to engage with our suppliers and with industry leaders. The other end is to engage with universities and start-ups, or university spin-offs," he explained.

The company stays involved with research in many areas, Nelson said, and finds itself "working with universities in Russia on some topics, working with universities in Boston on other topics."

This approach to innovation includes keeping an eye on new ideas outside the petroleum world. Nelson used current work in nanotechnology as an example.

"There are people working on nanosensors for the medical industry for targeting drugs, for instance, that might also work in our industry," he said.

Collaboration often involves partnerships and is usually well defined, but some companies also are pursuing broader forms of cooperation. They might work with inter-industry groups or invite general public input.

"There is open collaboration as well. That's when you have an organization that collaborates with customers and/or suppliers and/or channel partners to work together on some innovative projects,"

"Companies tend to equate innovation with invention, specifically patents. I think it's dangerous when that happens, because it assumes that the only innovation you're going to have is built around a product or technology."

Paylow noted.

"There are some companies in this industry that are really, really good at that and are pushing forward with it – Shell, for example," he said.

(See related story, page 10.)

✓ Invite and focus on relevant, applicable ideas.

Paylow said some companies put out a general request for new ideas or conduct a one-time campaign to encourage suggestions.

"The request is so broad that most of the stuff that comes in is neither actionable nor has a strategic fit," he said.

"If someone has an idea for a solar-powered diaper disposal system, that might be a great product but it doesn't fit our industry, and it certainly doesn't fit our company," he noted.

The better approach is an ongoing program to encourage and develop highly relevant thinking, Paylow said.

"We decided that we wanted to focus on very specific, defined strategic challenges that are basic to our organization today," he said.

"We're going to try to do innovation events several times a year," he added. "We're going to put a strategic challenge out from a high-level sponsor and then push the organizations to help come up with solutions to meet that challenge."

But note that a focus on applicable and actionable innovation does not limit the search to practical ideas. Requiring ideas to fit some notion of practicality can be death to innovation.

"Practicality is one of our lesser measures," Paylow said. "There are things that aren't practical today that may be practical in three or four years."

Instead of starting small, those companies just beginning the path to innovation probably can benefit most by thinking big – not limiting ideas or excluding too much from consideration.

"Companies tend to equate innovation with invention, specifically patents," Paylow said. "I think it's dangerous when that happens, because it assumes that the only innovation you're going to have is built around a product or technology."

"Innovation goes well beyond that, into incremental improvements into processes, or brand-new business models," he said.

One always helpful question to ask: Is this an innovative place?

Everyone in the organization should be able to answer, "Yes" – even if that means reshaping the corporate culture toward innovation.

"Part of it is cultural," Nelson said. "You have to make it part of the DNA." □




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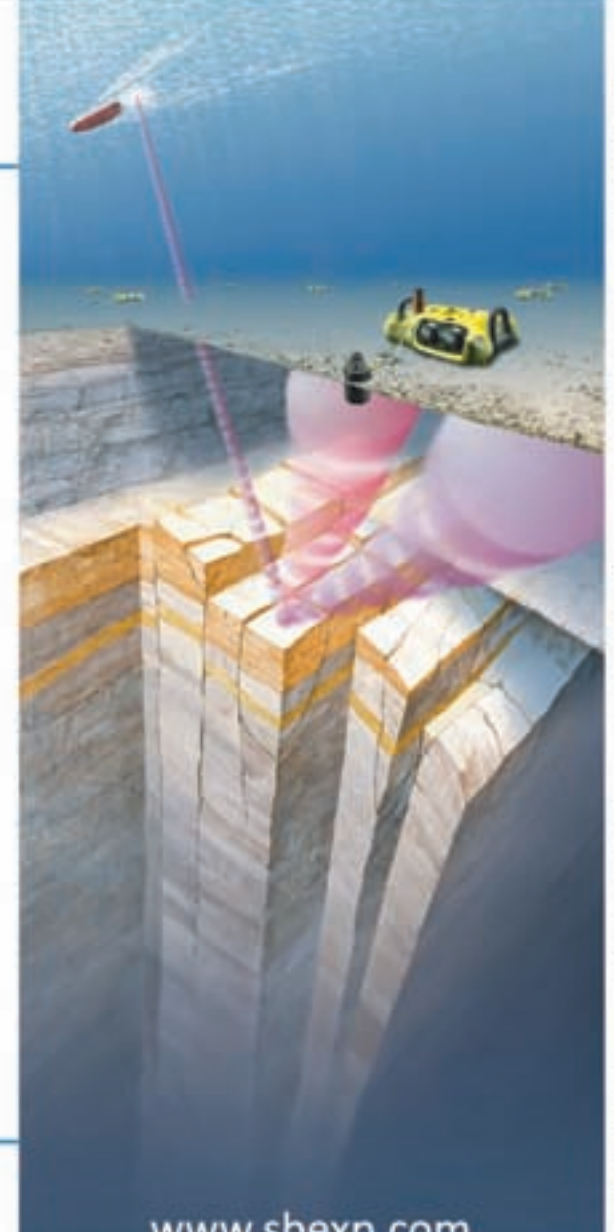
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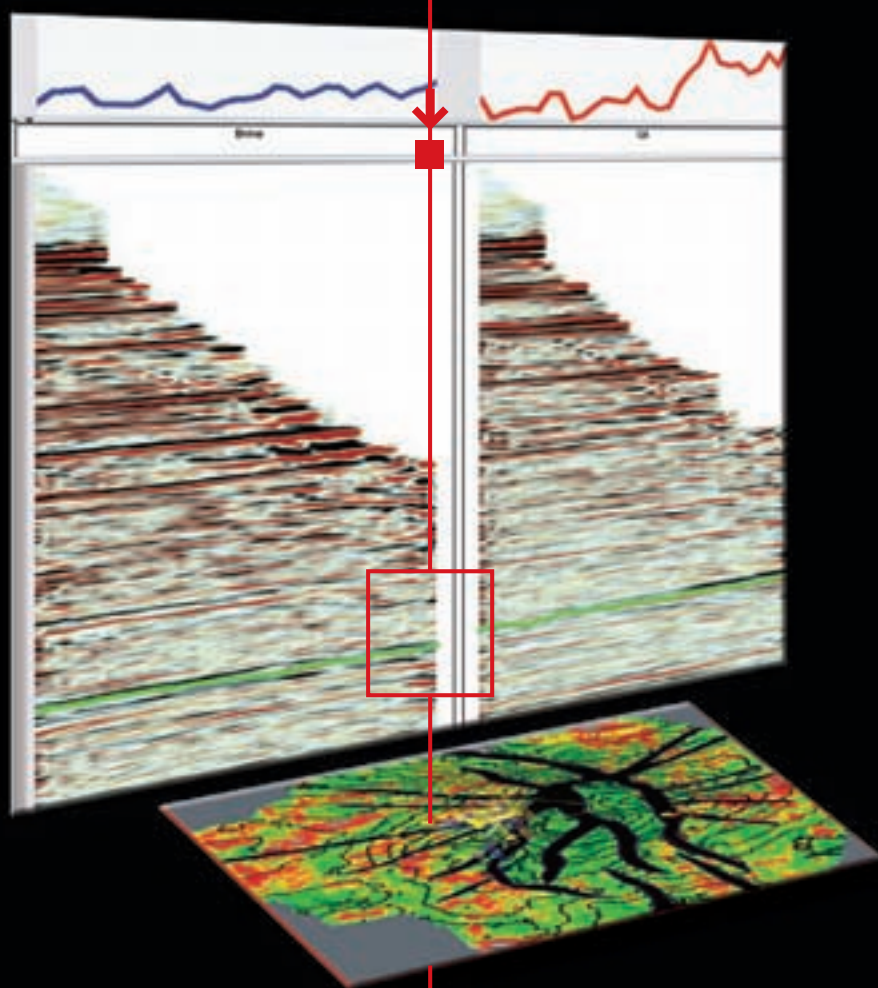
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'We're going to make them talk about it'

Pickens Plan Campaign Launched

By LARRY NATION

AAPG Communications Director

What to do about soaring energy costs, national security, economic chaos and no energy policy?

The answer, my friend, is blowing in the wind, says T. Boone Pickens.

The legendary businessman, philanthropist and AAPG member has unleashed a presidential candidate-caliber public relations campaign to push a sweeping wind power plan that would transform the U.S. energy mix and serve as an energy bridge to the future.

"I am calling on the next president and Congress to take immediate action in the first 100 days of the new administration to do whatever is necessary to make this plan a reality," Pickens said.

To promote the "Pickens Plan," he is bankrolling what his aides say will be the biggest public policy ad campaign ever, which began in July and is estimated by insiders to cost about \$50 million.

The nationwide multimedia advertising and Internet campaign includes a Facebook social networking site to generate momentum and focus attention on what he is identifying as a "crisis." The Web site is www.pickensplan.com and includes video of the ads that have appeared on television. Grassroots



Pickens



Photos courtesy of T. Boone Pickens

efforts also are encouraged and more information will be rolled out through the election season.

He also is on a whirlwind media circuit, and has been omnipresent on U.S. news and commentary programs and quoted widely in newspapers.

Pickens cited a U.S. Department of Energy report concluding that 20 percent of the U.S. electricity supply can be generated from wind turbines in the nation's "wind corridor" – a vast stretch from West Texas to the Canadian border. Pickens said the wind corridor is called the 'Saudi Arabia of the Wind' ... because we have the greatest wind reserves in the world."

He suggested the project could be funded by private investors.

Just last May, Pickens announced phase one of the Pampa Wind Project, which will be the world's largest wind farm with more than 4,000 megawatts of electricity, enough for 1.3 million homes.

His company, Mesa Power, ordered 667 wind turbines from General Electric as part of the \$2 billion first phase of the massive wind farm to be built in Texas. The company said the deal was the world's largest single-site wind turbine purchase order.

Under the Pickens Plan, power from thousands of wind turbines that would line the corridor could be distributed throughout the country via electric power transmission lines and could fuel power plants in large population hubs, he said.

continued on next page

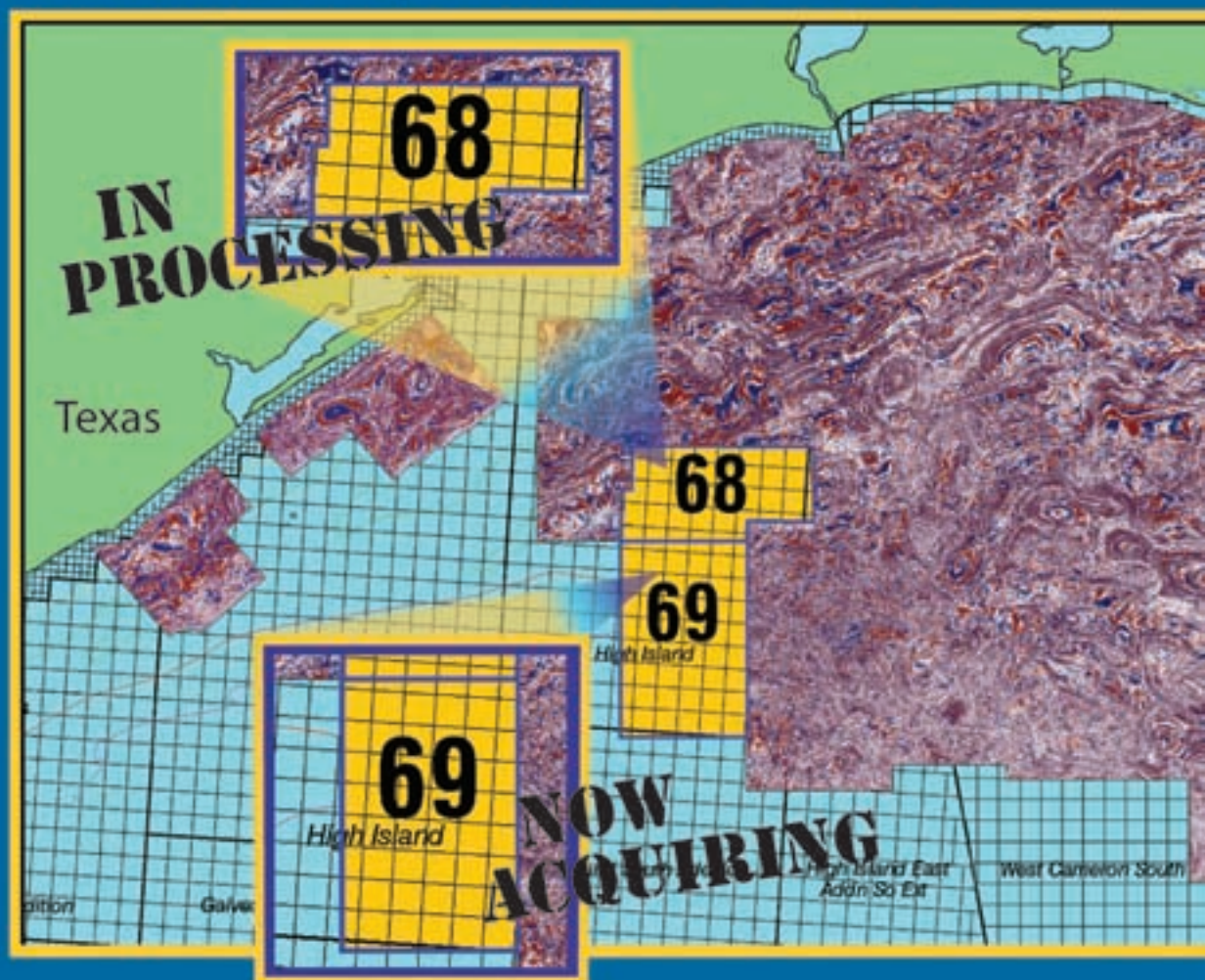
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continued from previous page

Fueling these plants with wind power would then free up the natural gas historically used to power them, and would mean that natural gas could replace non-U.S. oil as fuel for motor vehicles, he said.

Using natural gas for transportation needs could replace one-third of the United States' imported oil and would save more than \$230 billion a year, Pickens said.

AAPG President Scott Tinker agrees.

"Significant increase in wind power could allow natural gas to be used for non-electricity generation applications," Tinker said.

"America and the world need electricity," he continued. "It is the fastest growing end-use sector for energy, representing around 40 percent of end use energy in the U.S. today. Wind represents a very real growth area for the power generation sector."

Tinker also noted the challenges that "include public acceptance, limited geography to wind prone regions and the construction, transportation, commissioning, maintenance and decommissioning of turbines as wind grows into a larger segment of the power generation sector."

"Typical large-scale coal plants are around 1,000 MW and can serve as base load. A typical terrestrial wind turbine is about 1 MW, and cannot base load because of intermittency of wind. Thus, storing and transmitting electricity efficiently are critical enabling areas for advanced research," Tinker said.

In the Pickens Plan ads, he cites the long-repeated facts of U.S. dependence on imports for energy

Pickens Plan Action Items

✓ The government must mandate the formation of wind and solar transmission corridors.

✓ Renew the subsidies for economic and alternative energy development in areas where the wind and sun are abundant.

✓ With a wind corridor established, private industry will fund the installation

of thousands of wind turbines in the wind belt, generating enough power to provide 20 percent or more of the U.S. electricity supply

✓ Electric power transmission lines will be built – again funded by the private sector – connecting wind power generating sites with power plants providing energy to the population centers in the Midwest, South and West

regions of the country.

✓ With the energy from wind now available to operate power plants serving the large population centers in key areas of the country, the natural gas that was historically utilized to fuel these power plants can be redirected and used to replace imported gasoline and diesel as a fuel for thousands of vehicles in our transportation system. □



and drives home the impact of dependence, saying "it's extreme, it's dangerous and it threatens the future of our nation."

"This year, we will spend almost \$700 billion on imported oil, which is more than four times the annual cost of our current war in Iraq," Pickens said.

"In fact, if we don't do anything about this problem, over the next 10 years we will spend around \$10 trillion importing foreign oil. That is \$10 trillion leaving the U.S. and going to foreign nations, making it what I certainly believe will be the single largest transfer of wealth in human history."

"We are asking the American public to get behind this plan and to help us reduce our dangerous dependency on foreign oil. This has to be the number one priority in the country starting today."

Pickens' aide Jay Rosser promises that Pickens' face will be seen on Americans' televisions this fall almost as frequently as John McCain's and Barack Obama's.

"Neither presidential candidate is talking about solving the oil problem," Pickens said. "So we're going to make 'em talk about it." □



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The Kingfisher #1, a significant discovery well on the eastern shore of Lake Albert in Block 3A. The well flowed almost 14,000 barrels per day of light, sweet oil from four zones in the Miocene-Pliocene rocks.

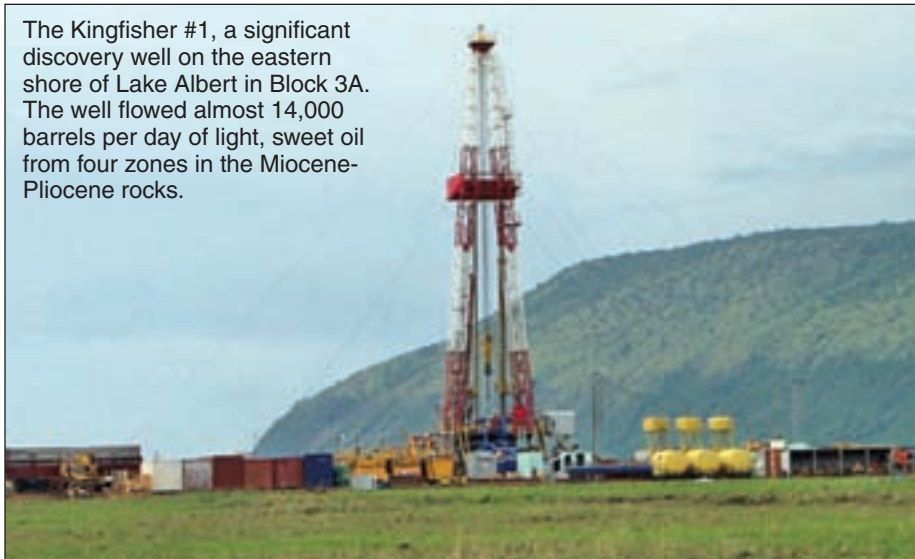


Photo and graphic courtesy of Paul Logan/Heritage Oil

Remote location presents challenges

Africa Rift Basin Is a New Frontier

By LOUISE S. DURHAM
EXPLORER Correspondent

Talk is rife about the end of the big finds in the oil patch.

Yet the explorers take the edge off of such thinking as they continue to come up with new impressive discoveries – such as the Albert Basin situated on the western arm of the East African rift valley.

"The Albert Basin is one of the newest petroleum basins in sub-Saharan," said AAPG member Paul Logan, chief geologist at Heritage Oil in Towcester, England. "We think it's a petroleum system with potentially several billion barrels of oil."

"It's a very large basin," Logan noted, "about 45 kilometers across by maybe 90

Several papers on the Albert Basin and other plays in east and central Africa will be presented during the AAPG International Conference and Exhibition, set Oct. 26-29 in Cape Town, South Africa.

Paul Logan will present the paper "Exploration on the Frontier – Toward an Understanding of the Albert Basin" at 3:10 p.m. on Monday, Oct. 27.

His paper is part of a session titled "East and Central Grabens of Africa: Unraveling the Puzzle."



kilometers long.

"There were some wells drilled in the 1930s which found some oil shows," he said. "There are some oil seeps around

the margins of the basin, which is what drew us and others in to look here."

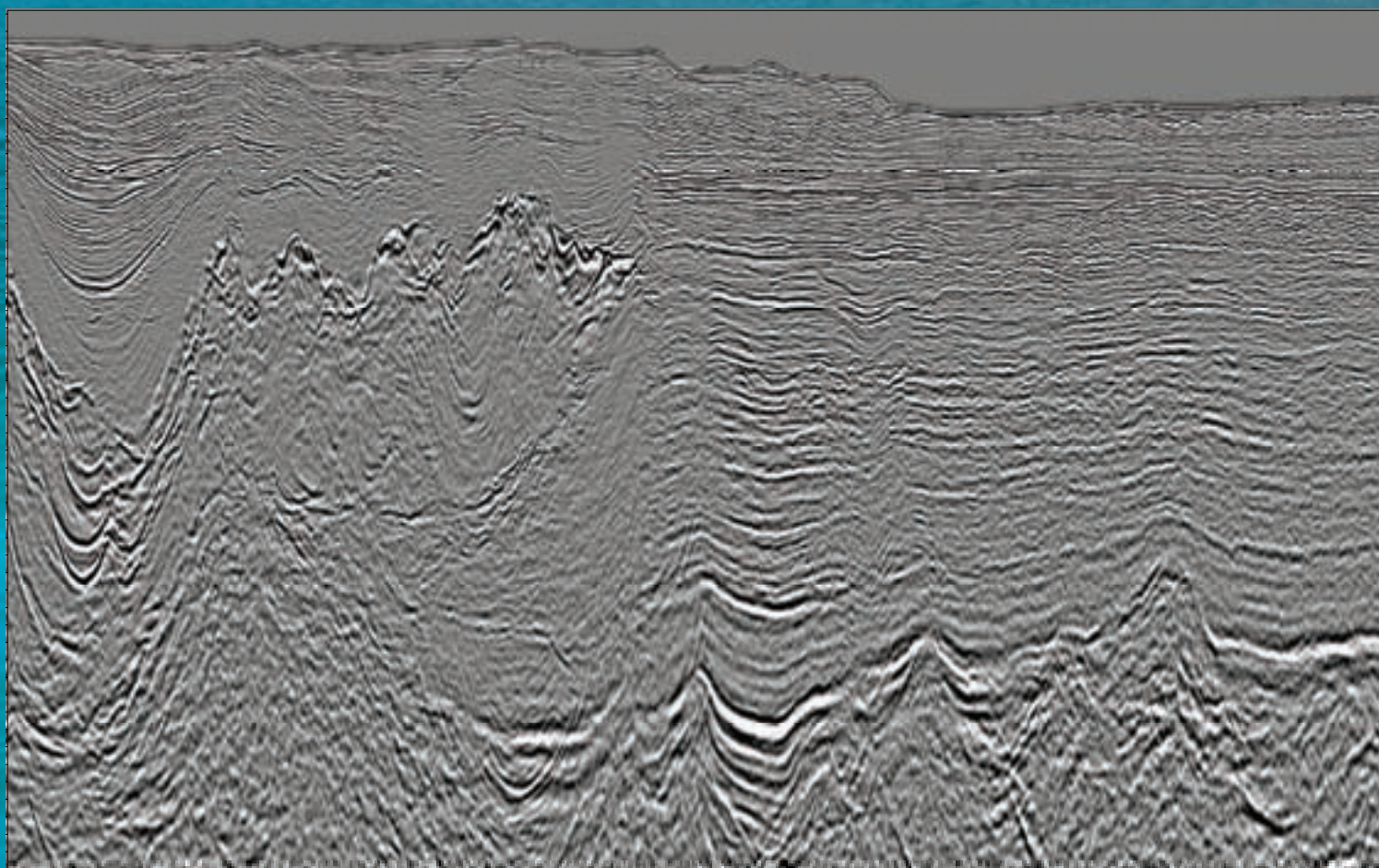
Heritage, which has worked in Uganda for a number of years, is currently busy with its licenses along Lake Albert on the western Ugandan side of the Albert Basin. It shares a 50-50 interest with Tullow Oil on Block 3A along the southern part of the lake and on Block 1 to the north.

In between, Tullow holds a 100 percent interest in Block 2.

"In the past two years there have been 10 wells drilled in this area, all of which have been successful," Logan said. "Some have been appraisal wells, but for

See **Albert**, page 18

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Photo courtesy of Global Geophysical

Global Geophysical's cable boat crew heads out for a day's work on Lake Albert.

Albert

from page 16

a new frontier province it's a pretty astonishing success rate."

Promising Beginnings

The two companies participated in a significant Heritage-operated discovery well – the Kingfisher #1 – in 2007, which went down on the eastern shore of Lake Albert in Block 3A. The well flowed almost 14,000 barrels per day of light, sweet oil from four zones in the Miocene-Pliocene rocks, according to Logan.

An appraisal well – the Kingfisher #2 – is currently drilling.

It's designed specifically to appraise reservoir zones discovered by the

Kingfisher #1 well and to explore a deeper potential objective not reached by the initial well because of rig limitations.

At press time the appraisal well had reached a depth of 9,642 feet, with the drill bit headed toward a total depth of 13,530 feet. Heritage reported that excellent oil shows had been encountered from three potential sandstone reservoir zones over a gross vertical interval of approximately 345 feet. Preliminary interpretation of the zones indicated they could be the lateral equivalent of three pay zones in the Kingfisher #1 well.

Logan noted they're drilling on a little spit of land that juts out into the lake because they don't have the capacity to drill in the lake, which is more than 400 feet deep at its maximum.

"We have to drill from shore, and there's a limit to what we can reach," he said. "We work closely with Tullow and we both have prospects in the lake, so we're working to bring a unit in to enable both of us to drill in the lake toward the end of the year or early next year."

The Ugandan/Democratic Republic of Congo border extends along the middle of Lake Albert. For now the two companies are limited to drilling on the Uganda side of the lake, but they hold title to the two blocks encompassing most of the DRC side and will have the OK to drill there once they acquire a presidential decree.

A Daunting Task

Working in such a remote area can sometimes be a daunting task in myriad ways. Lack of road access to the Kingfisher drill site, for example, creates a significant challenge.

Logan noted they shipped a barge in from Houston, which arrived in the form of 12 or more modular units. Each unit had to be driven 1,200 kilometers, placed in the lake and put together to construct the barge. This enabled the crew to ship the rig, supplies and equipment down the lake to the drill site.

It's not just the logistics on the drilling side that make this a tough go.

Global Geophysical Services faced similar challenges early last year when it teamed up with IMC Geophysics International to conduct a seismic survey for Heritage.

Global transported its specialized acquisition equipment from the United States to Uganda to work with IMC in the southern part of the lake to acquire a seamless 3-D data set across the water, the land component of the survey area and the gap between. The equipment was disassembled in Houston, shipped, transported over land via trucks, barged down the lake and reassembled at the shore.

Weather in the region poses another problem for operations. Severe storms are a familiar occurrence in this lake locale, so it's not a benign environment.

Any new exploration target presents its own set of geological challenges, and the Albert Basin is no exception.

"We're using high resolution quantitative palynology to establish a stratigraphy for the first time in this basin because there was nothing there before," Logan said. "We've been very successful in doing that."

"The palynology has proved vital in understanding the climatic and depositional history of the sequence," Logan noted. "We've established the age of the basin as being Miocene and younger, which has been quite important, so it's quite a young basin."

"It's a challenge to come to grips with a completely new basin," Logan said.

"But this is no puddle – It's potentially quite a significant petroleum province." □

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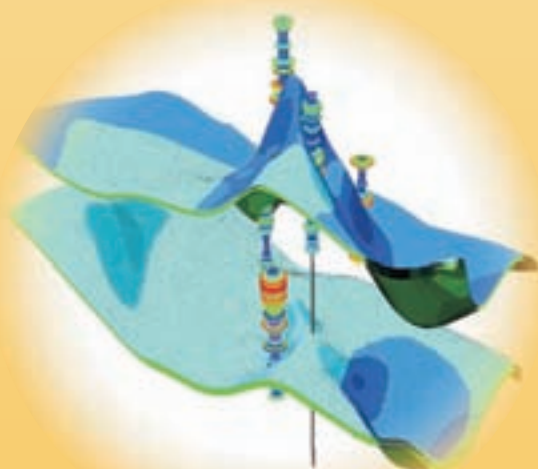
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Delivering Excellence in Petroleum Geoscience

Indonesia frontier gets new look

Deep Waters Probed for Seeps

By DAVID BROWN
EXPLORER Correspondent

The challenge:

Develop an extensive but focused overview of deepwater exploration potential offshore Indonesia.

TGS-NOPEC Geophysical in Perth, Australia, knew it had to provide an extraordinary solution to attract industry interest.

So it turned to an innovative approach for gathering multiple forms of offshore data.

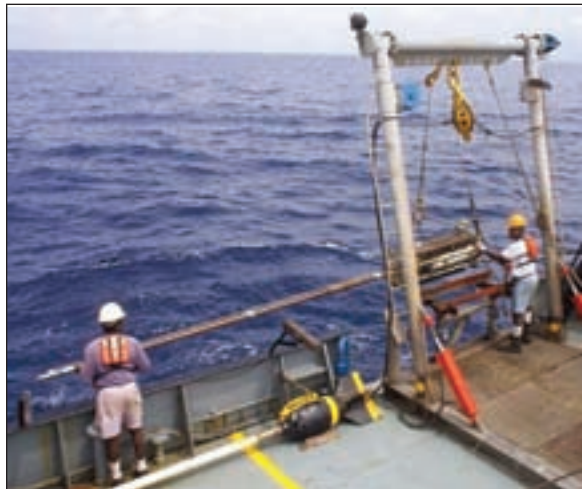
"Indonesia's frontier basins, especially the deepwater basins, are very, very under-explored. Most exploration in Indonesia has actually been focused around discoveries," said AAPG member Peter Baillie, TGS-NOPEC chief geologist Asia-Pacific.

Baillie will provide details of the offshore study in the presentation "Innovative Frontier Exploration Using Seismic and SeaSeep(tm) Data, Indonesia," during AAPG's International Conference in Cape Town in October.

The company held preliminary discussions with the Indonesian government in the first half of 2006, according to Baillie. Going in, it understood that a wealth of good data would be needed to generate attention for the nonexclusive survey.

"We're dealing with deepwater frontier areas that the industry has ignored or written off," Baillie said. "We had to provide evidence of prospectivity – including charge – to get the industry interested."

"With the combination of traditional seismic plus additional information, all of a



Indonesia's frontier basins – especially the under-explored deepwater regions – required an innovative touch to ensure success.

Photos, graphic courtesy of TGS-NOPEC



sudden, it gives you a whole new picture of these frontier basins," he added.

The company said its survey was the world's largest multibeam bathymetry study – as well as the world's first non-exclusive SeaSeep study.

An Innovative Setting

Few places in the world need exploration innovation as much as Indonesia.

An early member of OPEC, Indonesia has seen a long decline in production.

It became a net crude oil importer more than three years ago as its oil output slid below one million barrels per day.

TGS-NOPEC estimated the country produces about 950,000 barrels a day of crude oil currently, declining at 5 percent per year, and around seven billion cubic feet of natural gas per day.

In May this year, Indonesia announced it would leave OPEC.

Half of Indonesia's 60 basins could be prospective for hydrocarbon production, but its deepwater offshore basins were not only largely unexplored but also largely unevaluated.

To assess the country's deepwater prospects, the company went well beyond its usual approach of simply acquiring seismic data, Baillie said. In its offshore Indonesia project during the past year and a half, TGS-NOPEC has:

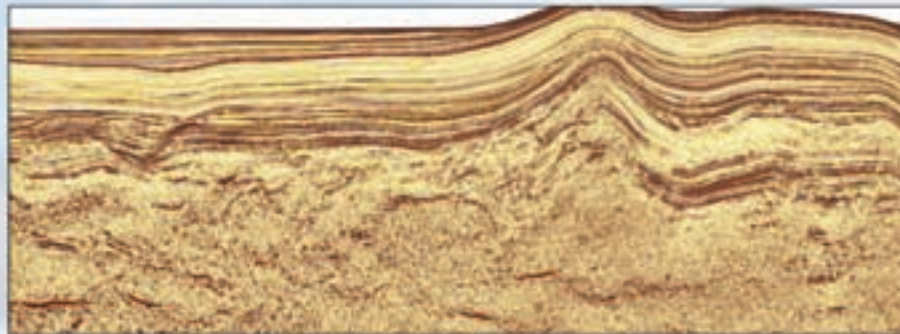
- ✓ Acquired 34,000 kilometers of new 2-D seismic data.
- ✓ Developed 400,000 square

See **Indonesia**, page 22

Offshore Barbados MC2D Data available

In preparation for Barbados' 1st offshore licensing round, Wavefield Inseis has acquired 8,255 km long offset Multi Client 2D seismic data in cooperation with the Government of Barbados.

- Seismic, gravity, magnetics and offset data are available
- Bid submission deadline extended to September 30th 2008



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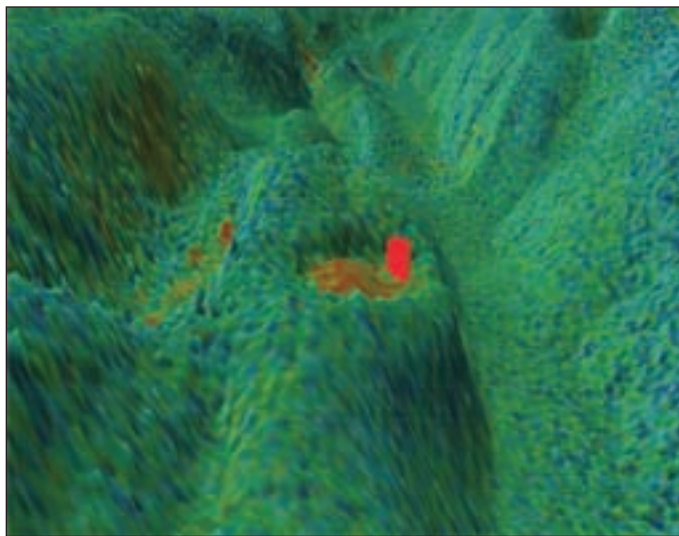
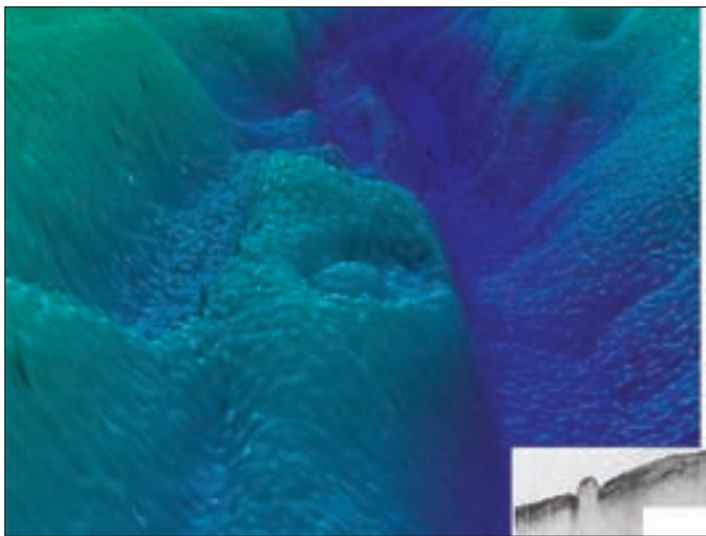
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Photos courtesy of TGS-NOPEC

Exploring the ocean floor using multibeam bathymetry (left, with seismic profile in the inset) provided a good way to see the surface's topography. Utilizing backscatter (right) allowed geoscientists to see and identify the seeps. The red object shows the core location.

Indonesia

from page 20

kilometers of SeaSeep data.

✓ Generated additional gravity and magnetic data.

✓ Taken more than 1,100 tightly targeted sediment cores.

✓ Conducted over 3,000 geochemical analyses.

Major companies have lacked the necessary data and evidence of hydrocarbon presence to undertake large-scale exploration offshore Indonesia, Baillie noted.

He said the need for information beyond seismic was obvious.

"We had to find evidence of charge," he said, "so we used high-resolution, multi-beam bathymetry and backscatter to find potential hydrocarbon seeps on the seafloor.

"When we found seeps or what we thought were seeps, we went in and sampled them," he said. "Once we had samples, we subjected them to standard geochemistry."

Signs of Seeps

Multibeam bathymetry uses multiple bands of swath sonar to develop a highly detailed topographic picture of the seafloor.

"On the multibeam bathymetry we've got a bin size of 25 meters. Even small mud volcanoes are coming in at that scale," Baillie explained.

"We've also used backscatter, which is the intensity of the reflected sound wave, and the bin size there is five meters, so your resolution is even greater," he said.

Signs of seeps include both positive and negative seafloor relief – hills or holes – although that isn't always present.

"Around some of the seeps there's no surface expression at all, but when you get hydrocarbons leaking you get communities of organisms, chemosynthetic communities," Baillie said.

"That has an acoustic contrast with the regular muddy substrate you get in deep water, so you pick them up on the backscatter," he added.

TGS-NOPEC sampled the seep locations and offshore study areas using navigated piston coring.

The piston-corer tool was steered from the coring vessel using USBL (Ultra Short Base Line) Navigation on the coring device coupled with differential GPS on the vessel, according to Baillie. That allowed precise placement for each core taken even at great depth.

"There's a transponder in the piston-coring device that can communicate with the vessel," he said. "They've got computer programs to accurately position the core on the seabed.

"Once we identified the seeps on the seabed, we could navigate our way in with an accuracy of plus or minus ten meters in over two kilometers of water depth," he added.

Another significant advantage of GPS was that the company knew exactly where all the cores in the study originated.

Sea-Faring Rover Boys

Each six-meter-long core underwent analysis that included examining any history of hydrocarbon seepage. For each core, "we took three samples and subjected those to a suite of geochemistry," Baillie said.

To be successful, he said, the Indonesia survey had to combine the expertise and cooperation of several people and organizations.

"There was a combination of different

See **Seeps**, page 24

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Seeps

from page 22

groups," he explained. "The Indonesian government had the vision and foresight to support our work. We had a company that provided us with financial and technical expertise. And we went in and did it."

Paul Gilleran, TGS-NOPEC manager Asia-Pacific, said the idea for surveying and studying the offshore Indonesia seeps actually came from an old concept in the industry.

"I think the idea was started by Exxon, to tell you the truth, with the Rover Boys who were around 50 years ago," Gilleran noted. "Exxon sent them around the world to find seeps. The difference was, we did it underwater."

"Multibeam technology has been around the oil business for some years, primarily used as a tool for pipeline routing

and identification of shallow hazards," he continued. "The idea to adapt this technology for seep detection as part of an integrated exploration tool came from a group of Unocal Indonesia explorationists ... (their) initial work and the desire to explore frontier basins led to the Indonesian frontier Basins Project."

That group of former Unocal Indonesia Co. employees started Black Gold Energy



Decker

LLC after the Chevron-Unocal merger.

Black Gold is an exploration company currently focused on Indonesia but planning to expand into other areas, according to AAPG member John Decker, the company's general manager in Jakarta.

As a forerunner to the extensive TGS-NOPEC survey, Unocal conducted its own bathymetry/backscatter study of selected areas offshore Indonesia in 2003, Decker said.

"We did a program where Unocal was able to convince itself – and convince everybody who worked on the project – that oil seeps could be found on the ocean

bottom," he said.

"And it worked very, very well," he added. "It's an incredibly powerful differential tool for basins."

Surveying the Scene

Most seabed seeps found in the Unocal and TGS studies were gas seeps of various sizes, but several liquid hydrocarbon seeps also were discovered.

"In those situations we can run biomarkers, determine the age of the oil, the age of the source, the source facies of the oil," Decker noted.

For instigating and underwriting the survey, the Indonesian government granted Black Gold right of first refusal on 10 offshore exploration blocks, half of them included in a current bid round, he said.

The company will conduct drilling operations there, probably in 2010-11, and "we intend to find and produce oil," according to Decker.

He expects some major oil companies, large independents and national energy companies to join the hunt.

"The majors are looking at trends and basins," he noted. "In this portfolio TGS has identified there are both prospect opportunities and huge basinal trend opportunities."

He said the survey was so beneficial "we plan to use it in other basins around the world and in other basins in Indonesia."

Gilleran said TGS-NOPEC drew on earlier studies, its own experience and consultation with industry experts to help define the survey expanse, which covers a number of large areas along the Indonesian archipelago.

"A lot of that was based on knowledge and geologic concepts and opportunity. We have been working in Indonesia for several years," he said.

He called the offshore survey "an incredible logistical operation – it's a huge area" covering a total length of about 5,000 kilometers.

"There's a lot of fishing in some of the areas – they fish in deepwater as well as shallow water," Baillie said. "That's the kind of thing you run into in Indonesia."

According to Gilleran, most of the offshore areas had been unevaluated, under-evaluated or poorly evaluated for exploration potential.

"A large number of potential prospects or even basins were written off by industry with little or no data at all, and some of the time with erroneous interpretation," he said.

Gilleran said TGS does not discuss individual survey costs but did say the investment was significant.

"We had up to 11 vessels operating at once," he said, including two seismic vessels, two multi-beam vessels, a coring vessel and chase boats.

With the last of the processed seismic data arriving in July, the survey is finished and available for industry buy-in on a non-exclusive basis, Baillie said.

"In some areas we got excited about what we saw and we went back and acquired more data there, but it's all completed now – it's totally in the bag," he said.

With such a large area under study, the company concentrated on gathering proof of petroleum systems and producing plenty of data for evaluation.

"We took a portfolio approach, knowing we would get technical wins and technical not-so-much wins," Baillie said.

High-quality 2-D seismic was included instead of 3-D primarily because of the size of the evaluation area. More focused 3-D surveys could come later when companies zero in on specific prospects.

Baillie will discuss geological and geographical details and additional survey specifics at the AAPG Cape Town meeting.

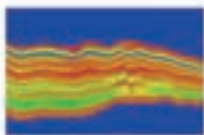
In this case, an innovative approach paid off.

"We've gone a step beyond anything we'd ever done in the past." □

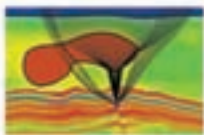


Solving the 3D puzzle

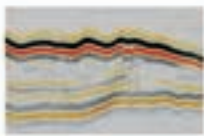
SeisRoX™ rapidly simulates 3D PSDM images which account for survey effects, overburden effects and detailed rock properties.



Multi-domain Model: describes the geometrical structure and rock physics properties of the model. Operating in up to three different domains: the geological, the elastic, and the reflectivity domain, the user is able to move between domains automatically using pre-defined transformations.



Background Model: accounts for the seismic wave propagation effects down to and up from the target reflectors, including survey geometry, source, and overburden.



SimPLI: is a new methodology which enables the user to take the output of the multi-domain model and combine it with the illumination information generated by the background model and rapidly simulate accurate 3D PSDM images. The speed at which the images are created enables the user to perturb the properties within the multi-domain model and instantly see the effect on the seismic image.



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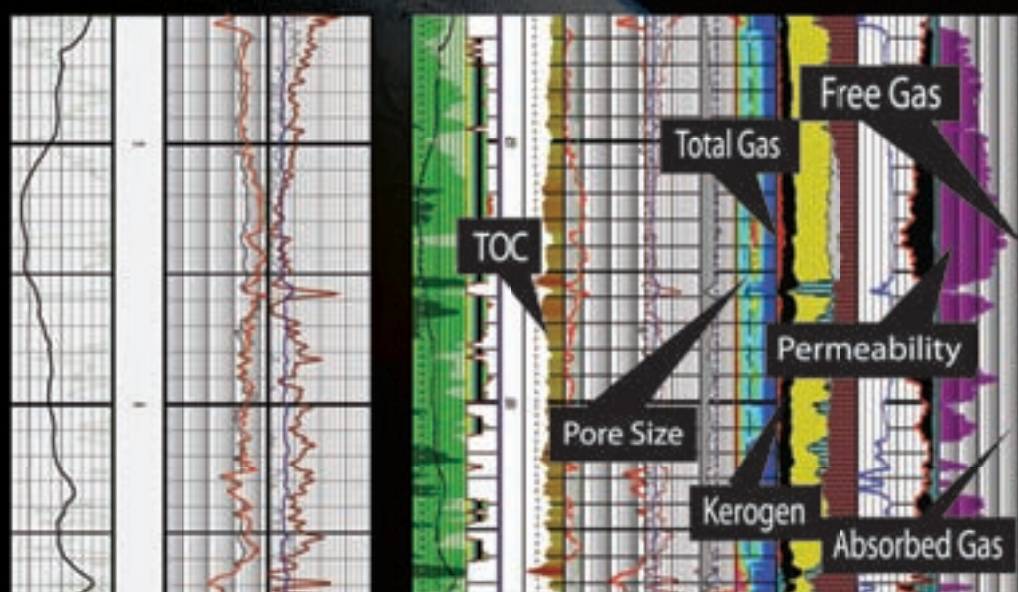
NuTech has redefined Shale Vision with the success of NuSource- A shale analysis that has been run over 2,500 wells during the past three years.

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NuSource Provides:

- TOC
- Absorbed Gas
- Heavy Minerals
- Pore Size
- Kerogen
- Free Gas
- Total Gas
- Permeability



Conventional Triple Combo NuSource Shale Evaluation



Shale Summary Listing

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Guess what? It's complex

Woodford Joins Shale Parade

By LOUISE S. DURHAM
EXPLORER Correspondent

Domestic shale plays, whether oil or natural gas, have become so numerous it's difficult to continue to think of them as unconventional.

Shale formations such as the Bakken, Fayetteville, Marcellus, Barnett and others all have attained household name status in the industry.

The Woodford Shale in Oklahoma's western Arkoma Basin is another active yet until recently, somewhat less publicized shale play.

In fact, activity in the play has skyrocketed since 2004. Twenty-five rigs currently are active there, and over 350 wells – horizontal holes for the most part – already have been drilled.

The most active operators are Devon, Newfield, Chesapeake and Antero Resources.

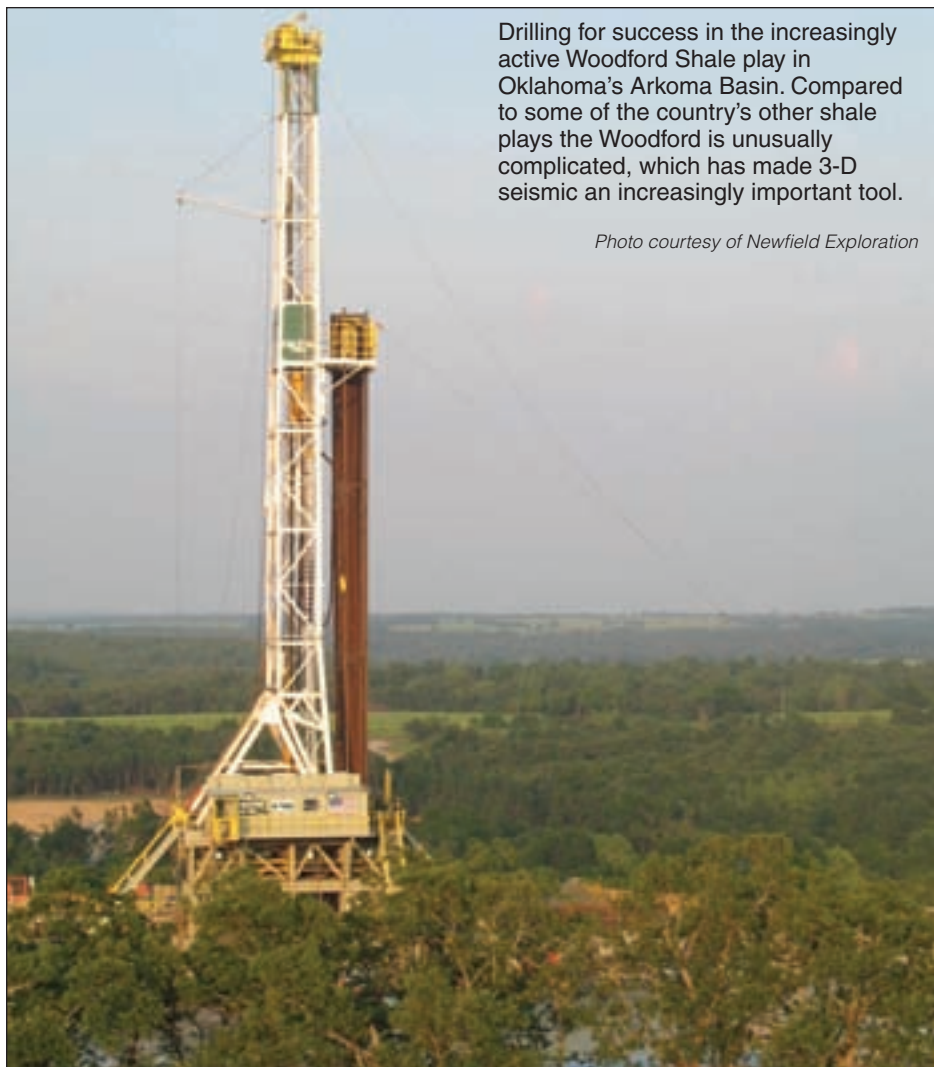
"The Devonian-Mississippian age Woodford Shale is an important source rock in central and southern Oklahoma, where it's unconformably underlain by carbonates of the early Devonian Hunton group and overlain by the Mississippian Sycamore and Mayes shales and limestones," said AAPG member Bob Tucker, a development geologist at Denver-based Antero.

"It's both an oil and gas source, depending on the thermal maturity and kerogen type," he continued. "It's a black siliceous shale, with abundant chert beds in the upper portion.

"The lower portion is organic rich, and pyrite is abundant throughout, along with minor phosphate and dolomite beds."

Drilling for success in the increasingly active Woodford Shale play in Oklahoma's Arkoma Basin. Compared to some of the country's other shale plays the Woodford is unusually complicated, which has made 3-D seismic an increasingly important tool.

Photo courtesy of Newfield Exploration



Dealing With Complexities

Compared to relatively structure-free resource plays like the Bakken and the popular Barnett, the Woodford is unusually complicated.

The Arkoma Basin itself is structurally complex, with multiple generations and styles of faulting. Faults and unexpected structural geometries can have adverse effects on both the length of the laterals and placement of the laterals in the section.

Antero decided to attack these challenges head-on with 3-D seismic data. The company participated in a spec data shoot that CGGVeritas implemented to acquire 284 square miles of 3-D data in Oklahoma's Atoka and southern Coal counties.

Prior to this Atoka 3-D survey in 2007, much of the area had only a limited grid

See **3-D**, page 28

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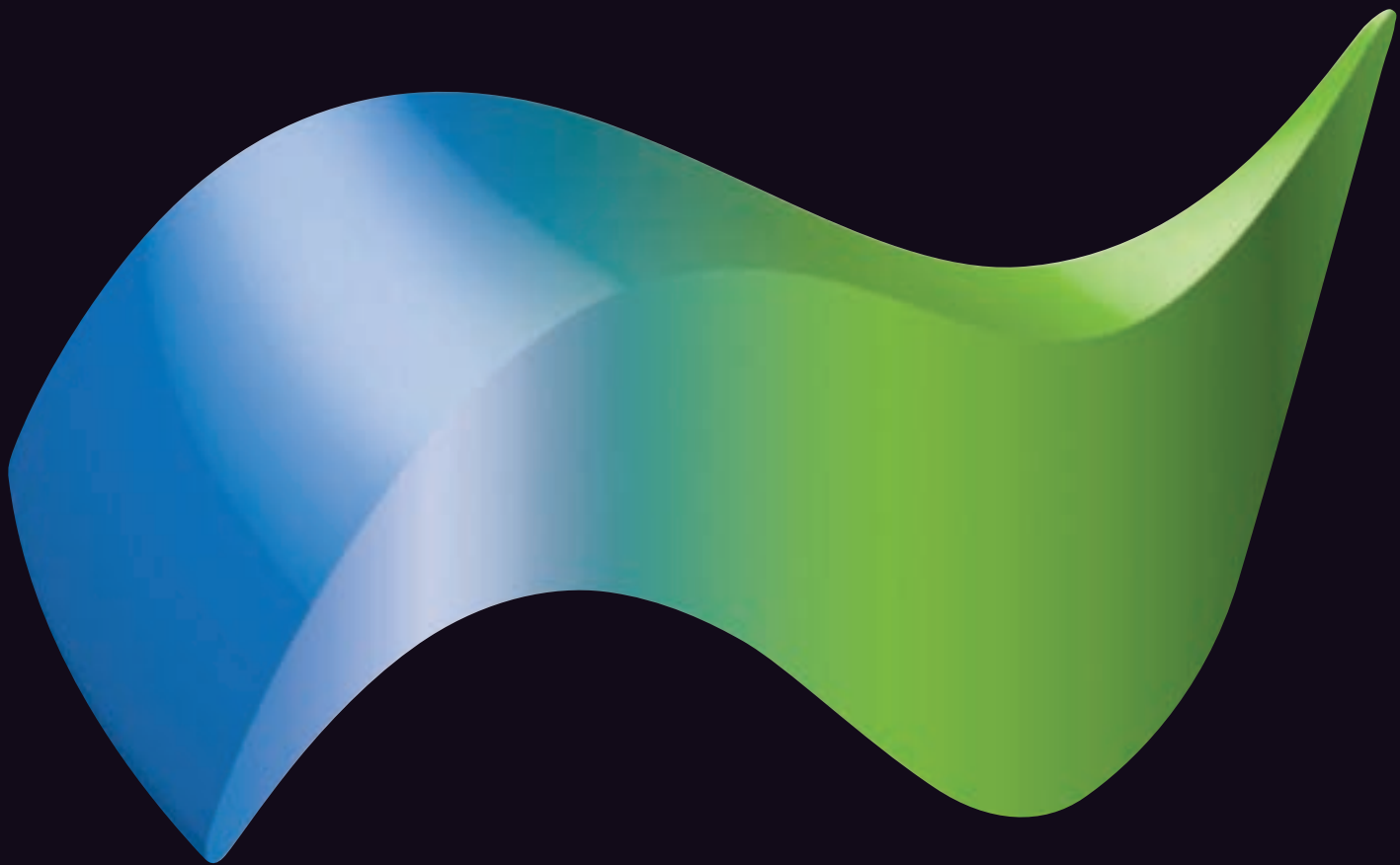
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3-D

from page 26

of 2-D data.

Tucker gave a presentation at the RMAG/Denver Geophysical Society 3-D symposium earlier this year discussing the use of these data to reduce drilling risk in Woodford Shale horizontal wells.

The seismic data are used principally to map faults and dip orientation to reduce drilling and completion risk, Tucker said, while noting that the data facilitate:

- ✓ Characterization of steep dip panels, which enables better well planning and geosteering.
- ✓ Identification of faults that can cause problems, e.g., laterals drilling out of zone, conduits for water production, sinks for frac energy.

- ✓ Recognition of significant unconformities that would yield lower quality wells.

Preferred Targets

Unfaulted dip panels are the preferred sites for horizontal well placement, according to Tucker.

"The western Arkoma is unique in that the shallow Atoka and younger section are structurally detached from the deeper section," he said. "Prior to acquisition of the Atoka 3-D survey, well

control and 2-D data allowed recognition of 10-degree-northeast true dip at the Woodford level.

"Dip panels generally behave as rigid blocks," Tucker noted. "Minor folding does exist as drag along faults, and the Woodford level structure locally has an undulose character. This may be due to subseismic faults.

"Knowledge of dip magnitude facilitates well planning and efficient drilling."

In such a structurally complicated area, it comes as no surprise that the

3-D survey was particularly valuable to identify faults.

"The greatest benefit from the Atoka survey is the recognition of faults – intersecting a fault can cause significant problems for a horizontal well," Tucker said.

"Faults can either be avoided entirely by stopping the lateral short of the trace of the fault," he said, "or by anticipating the sense and magnitude of the throw and drilling through the fault."

A 'Significant' Unconformity

There are three generations of faults present in the Atoka area:

- ✓ Pre-Ouachita normal faults.
- ✓ Ouachita thrust belt-related thrust faults.
- ✓ Tishomingo uplift-related reverse faults.

Tucker noted the pre-Ouachita normal faults are the most important with respect to drilling Woodford horizontal wells.

"They generally have a north-70-degree-east orientation, although east-west faults are locally significant," he said. "Separation is from a few tens of feet to over 1,500 feet, and throw is generally down to the south over most of the Atoka 3-D survey area."

He added that down-to-the-south normal faults are present throughout the Arkoma Basin.

A locally significant unconformity that removed the Wapanucka to upper Hunton interval – including the Woodford – was recognized via the Atoka 3-D survey. The area where the Woodford is absent is localized to the crest of a rotated fault block.

"Wells with laterals beneath the unconformity are poor producers for the most part," Tucker said, "with lower gas rates and higher water production.

"Understanding the extent of the unconformity resulted in structurally favorable locations being bypassed because of potentially poor well performance or missing Woodford."

Problems and Possibilities

Even though the Atoka 3-D data are high quality overall, Tucker noted a few problems have been identified:

- ✓ Geosteering analysis doesn't yield results comparable to what is expected from seismic.

✓ Some areas have velocity anomalies related to overlying structural complexities, yielding time structure that differs from depth structure.

- ✓ Structurally complex areas are difficult to image.

"The Woodford shale play is complex, and the geology, drilling and completion design, and production practices all have major impacts on well productivity," Tucker said. "The application of 3-D seismic data is one component of risk management."

The Atoka 3-D survey clearly was a vital component in that it allowed recognition of structural and stratigraphic features that impact whether a horizontal well is successful.

Tucker summarized the advantages afforded by the survey:

- ✓ An accurate estimate of dip magnitude enables correct placement of the lateral in the stratigraphic interval of interest.

✓ Dip changes or small-scale faults may cause wells to drill out of zone but can be dealt with given sufficient planning.

✓ Large faults that compartmentalize the area should be avoided.

✓ Wells drilled in areas with truncated Woodford may perform poorly.

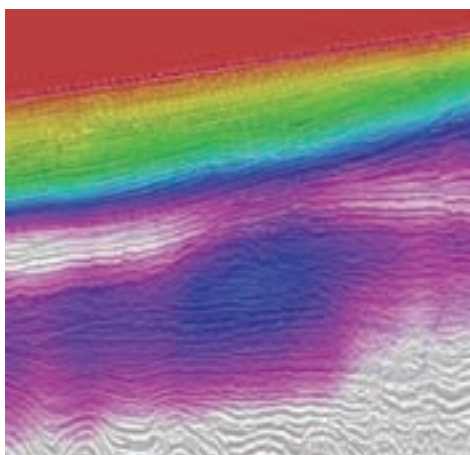
✓ Velocity anomalies can cause problems with time-based structural geometries. □

Your Geology....Rediscovered

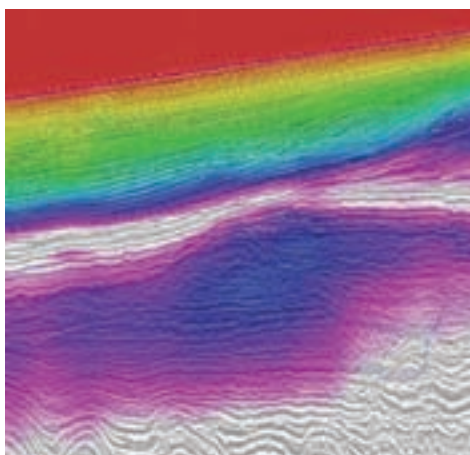
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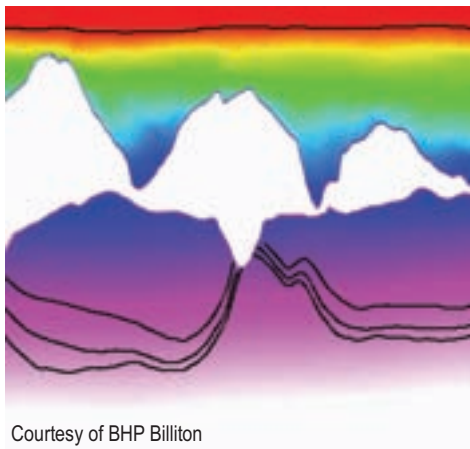
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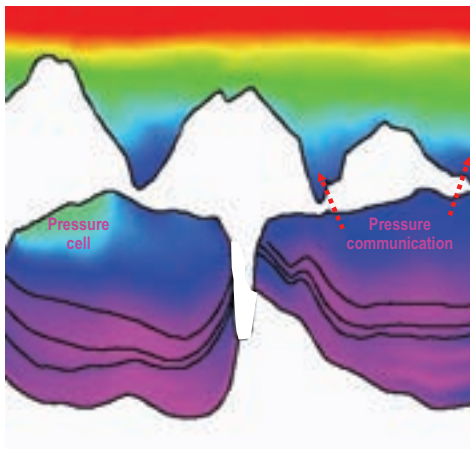
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Original Velocity Model

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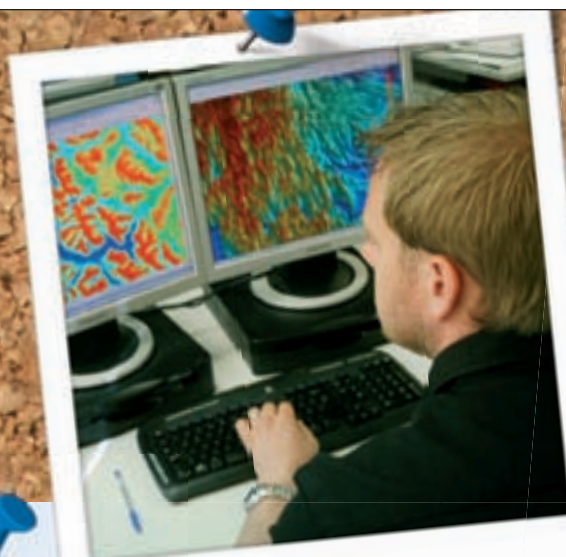
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Technology integration pays off

Shale Experiences to be Shared

By LOUISE S. DURHAM
EXPLORER Correspondent

You don't have to be in the United States to know that the country's ubiquitous shale plays are high impact.

Thanks to the upcoming AAPG International Conference and Exhibition, some of the important exploration innovations that have helped in America will grab a global spotlight.

This year's ICE, set Oct. 26-29 in Cape Town, South Africa, will include a presentation on integrating new technologies to map structural features and improve stimulation treatments in shale gas plays.

With integration as the overall theme, the talk will focus on coupling surface seismic, microseismic mapping and wireline logs in the now-familiar Fayetteville Shale play in the Arkoma Basin.

The paper to be presented was co-authored by AAPG members Don Burch, senior geophysicist at Aspect Abundant Shale in Golden, Colo., and Joel Herve Le Calvez, senior geologist at Schlumberger in Dallas.

They start with the given: Sizeable volumes of gas currently are being produced from unconventional shale reservoirs such as the Barnett and the Fayetteville in the United States.

Burch goes on to note these plays are driven by both technology and economics, emphasizing that modern well log evaluation techniques and completion methods are required to yield economic wells.

This whole story is a lesson about the importance of having a geoscientist on site armed with the equipment to provide real time feedback during fracture stimulation.

Owing to the extremely low porosity and permeability of these shale reservoirs, they must be stimulated via hydraulic fracturing to achieve effective production volumes.

The stimulation process induces microseismic activity, which allows the geoscientists at the well site to "listen" to the fracture stimulation.

Microseismic hypocentral locations can be determined in a matter of seconds using advanced processing algorithms and transmission techniques to process large volumes of data on-site.

By monitoring the induced microseismic, the geoscience team can avoid making too many assumptions about the fracture stimulation geometry.

The Fayetteville Details

Employing an example from Aspect's former operations in the Fayetteville Shale, Burch said the upcoming presentation will highlight the integration of real-time microseismic monitoring of hydraulic fracture treatments with surface seismic data to:

- ✓ Detect potential sub-seismic scale structural geohazards.

- ✓ Verify interpreted fault geometries.

- ✓ Allow on-the-fly changes in fracture stimulation design to maximize the reservoir volume effectively contacted by the stimulation treatment.

Aspect methodically honed its approach to the Fayetteville operation.

"We had surface 3-D seismic in the area with some level of interpretation, and we identified structure and picked some faults and things like that," Burch said.

"But as far as calibrating our fault identification to its impact on our stimulation we didn't have any information.

"Likewise we had a complete wireline suite," he said, "and although you can do some one-dimensional work and look for fracture boundaries and mechanical properties changes and things like that, you are limited in your extrapolation into the seismic data by a variety of assumptions there.

"The microseismic ultimately tied things together because it allowed us to confirm existence of faults we were



picking in the seismic as well as their geometry."

"The geometry was important," Burch noted, "with respect to the risk associated with a particular fault – were you going to open that fault up in the direction of a water bearing formation, or was it going to open harmlessly into an area with no resource but didn't represent a water hazard?"

Real Time

Burch said that his team was able "to basically tie the whole story together.

"We calibrated our surface seismic data, and from the petrophysics we could tell what sort of influence that particular fracture stage was going to have if it went somewhere we didn't intend it to go.

"We would know if it was headed for a water risk, in which case in the field doing this live, we'd back out of the throttle on

See **Shale**, page 34



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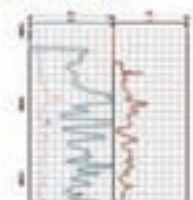
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Study consortium being formed

Bakken a Different Breed of Cat

By LOUISE S. DURHAM
EXPLORER Correspondent

'Midst the plethora of unconventional shale gas resource plays that have sprung up in varying locales across the nation, the emerging Bakken play stands apart as a different breed of cat.

The Bakken, you see, is primarily about oil – the "homegrown" kind.

It's a Big Deal.

In fact, the U.S. Geological Survey recently announced that its assessment of the Upper Devonian-Lower Mississippian Bakken formation in the Williston Basin in Montana and North Dakota revealed about 3.65 billion barrels of undiscovered technically recoverable oil – the largest single deposit in the United States except for Alaska.

But there's another reason to call it something different: A special research consortium has been formed to better understand its geology and develop its huge potential.

The consortium effort is spearheaded by two high-profile AAPG members who are the co-principal investigators:

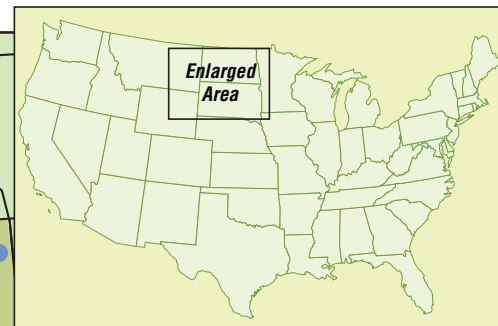
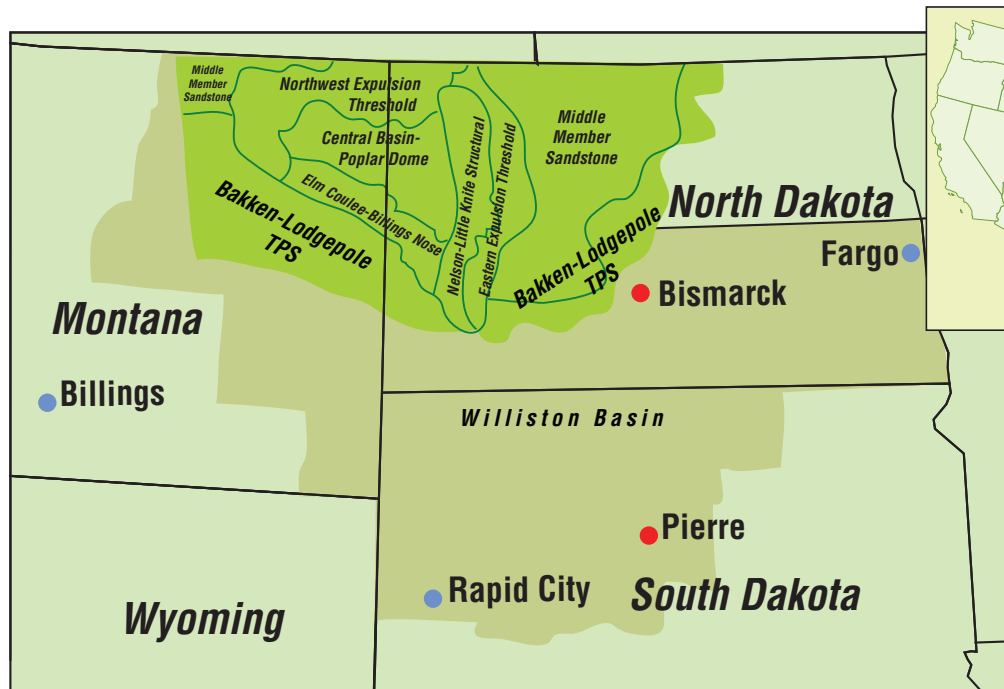
✓ **Stephen Sonnenberg**, a past AAPG



Sonnenberg



Sarg



properties of samples retorted to different maturity levels.

"The integrated reservoir study will include detailed subsurface mapping of depositional and fracture systems using seismic attributes, core and well logs and sequence stratigraphic analysis," he continued, "and reservoir characterization using a new high resolution SEM tool to quantify pore systems."

A Complex Target

Although commonly referred to simply as "a shale," the Bakken actually is made up of an upper and a lower shale member and a mixed siliciclastic carbonate middle member. The formation reportedly had yielded more than 105 million barrels of produced oil through 2007.

In order to explore and exploit this promising resource to its full potential, however, the consortium leaders see considerable work yet to be done to get a

See **Bakken**, page 34

president who is now professor and Boettcher chair in petroleum geology at Colorado School of Mines (CSM) and chairman-elect of the House of Delegates.

✓ **J. Frederick Sarg**, an AAPG editor (Memoir 81), past Distinguished Lecturer, past SEPM president and current research professor Colorado Energy Institute at CSM.

They propose to conduct an initial assessment of the hydrocarbon potential of the Bakken and to develop an integrated reservoir geo-model for this specific

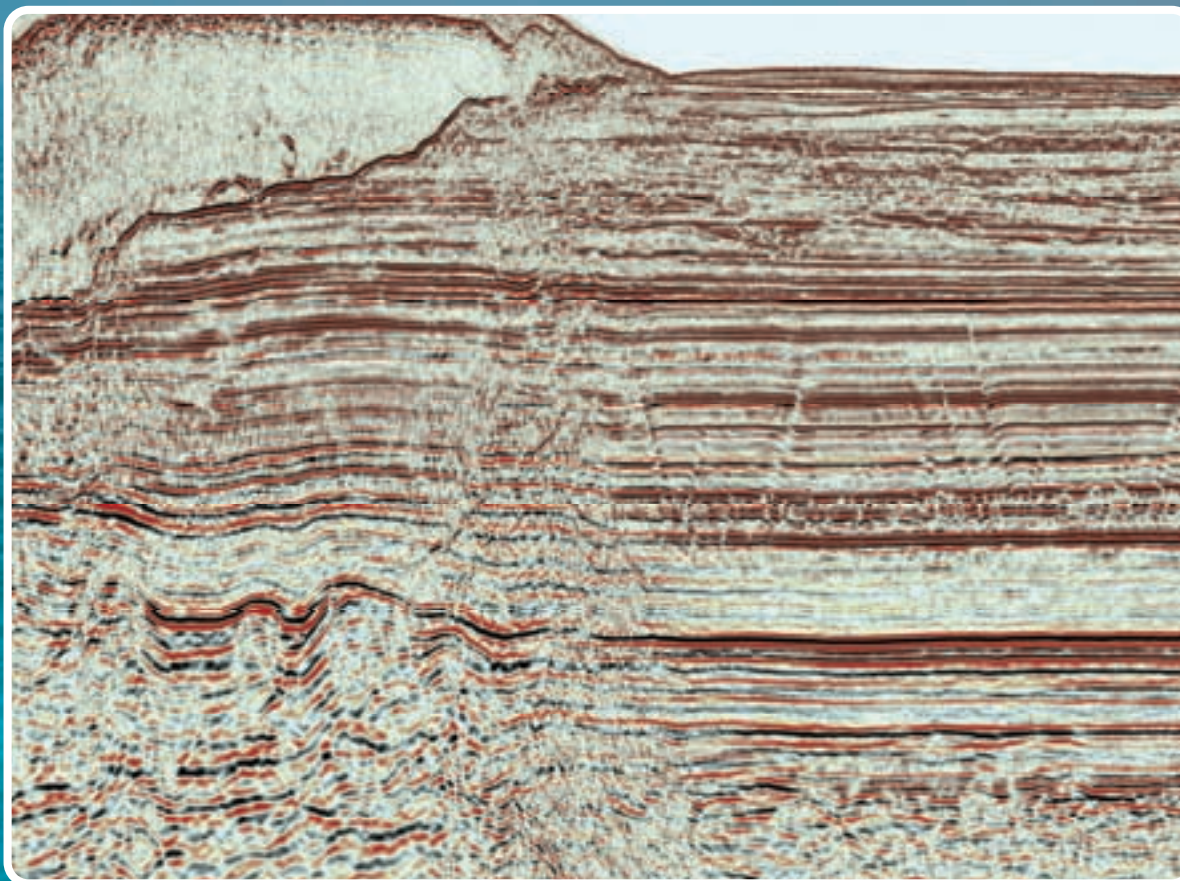
stratigraphic interval in the Williston Basin, according to Sonnenberg.

"The Bakken is a world class resource play," he noted. "To fully understand it will require a big research project, and we hope to aid industry in achieving those technically recoverable numbers."

"The resource assessment we'll do will include measurements of impedance changes at different Bakken source rock maturity levels," Sonnenberg said, "using both samples at different measured maturity levels and by measuring



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Shale

from page 30

the frac and stop the propagation along that fault," Burch said.

"Conversely, when we saw one of these faults go up through a frac barrier into a zone of no resource, we'd let that particular stage run because we weren't risking a water hazard and might still be able to capture a little bit of resource from that particular zone."

This whole story is a lesson about the importance of having a geoscientist on site armed with the equipment to provide real time feedback during fracture stimulation.

"Joel and I sat in the truck at 2 a.m. with him bringing data into his machine, and I'm taking that directly off and

putting it into my 3-D model," Burch said. "We're making on-the-fly and on-the-ground decisions about how the fracture is going, and we're talking to the guys with their foot on the throttle – that turned out to be key in the overall performance of a particular fracture."

"Having the ability to cohesively tie together a model and calibrate things in real time in the field when you're doing fracture stimulation was fundamentally important," Burch said.

A noteworthy feature of the upcoming presentation in Cape Town is how to QC the data on-the-fly in the field.

"You need to have a confidence in each of these events you can place because you're going to have to draw conclusions based on when they occur and where they occur," Burch said, "and there are errors associated with that." □

Bakken

from page 32

solid handle on the entire Bakken petroleum system comprised of reservoir rocks, organic rich source beds and an abundance of seals.

The various lithologies present are characterized by low porosity and permeability in large part – always a challenge for the operators.

The consortium is being assembled to address the many complex aspects of this apparent huge resource.

It is anticipated that participating companies will provide funding and/or data. The work itself will be performed by students and faculty members.

"We think this will be a two-to-three-year project," Sonnenberg said. "We're going to cover all aspects of the Williston Basin Bakken and will start with some

early phases of just studying the Elm Coulee area (northeast Montana) and then moving to the Parshall Field area (North Dakota).

"By the end of the study, we will have covered the entire Williston Basin."

Two student thesis projects already are under way, one focusing on Elm Coulee Field and the other dedicated to Parshall Field.

Objectives and Benefits

Sonnenberg outlined the objectives of the consortium:

- ✓ Characterize geologic, geochemical, geophysical and operational parameters that distinguish the Bakken reservoirs and that differentiate high performing wells.

- ✓ Develop methods to accurately assess the potential of shale and tight reservoirs for oil generation and production using common industry petrophysical measurements.

- ✓ Accurately delineate the natural fracture system to guide horizontal wells to intersect a large number of open fractures.

- ✓ Conduct an initial assessment of the hydrocarbon potential of frontier oil resources.

Industry will benefit from the project in a number of ways, Sonnenberg noted:

- ✓ The study will establish a new predictive framework and geologic model for the Bakken interval that will improve play and prospect assessment and allow a more accurate estimate of reserve volumes.

- ✓ The new predictive geo-model will enhance the operators' understanding of Bakken producibility, reduce drilling risk and provide more accurate resource estimates.

- ✓ Optimization of drilling and completion strategies will enable companies to improve their cost recovery.

- ✓ Reservoir characterization will optimize reservoir development and reduce the number of drilling locations, yielding a smaller environmental footprint.

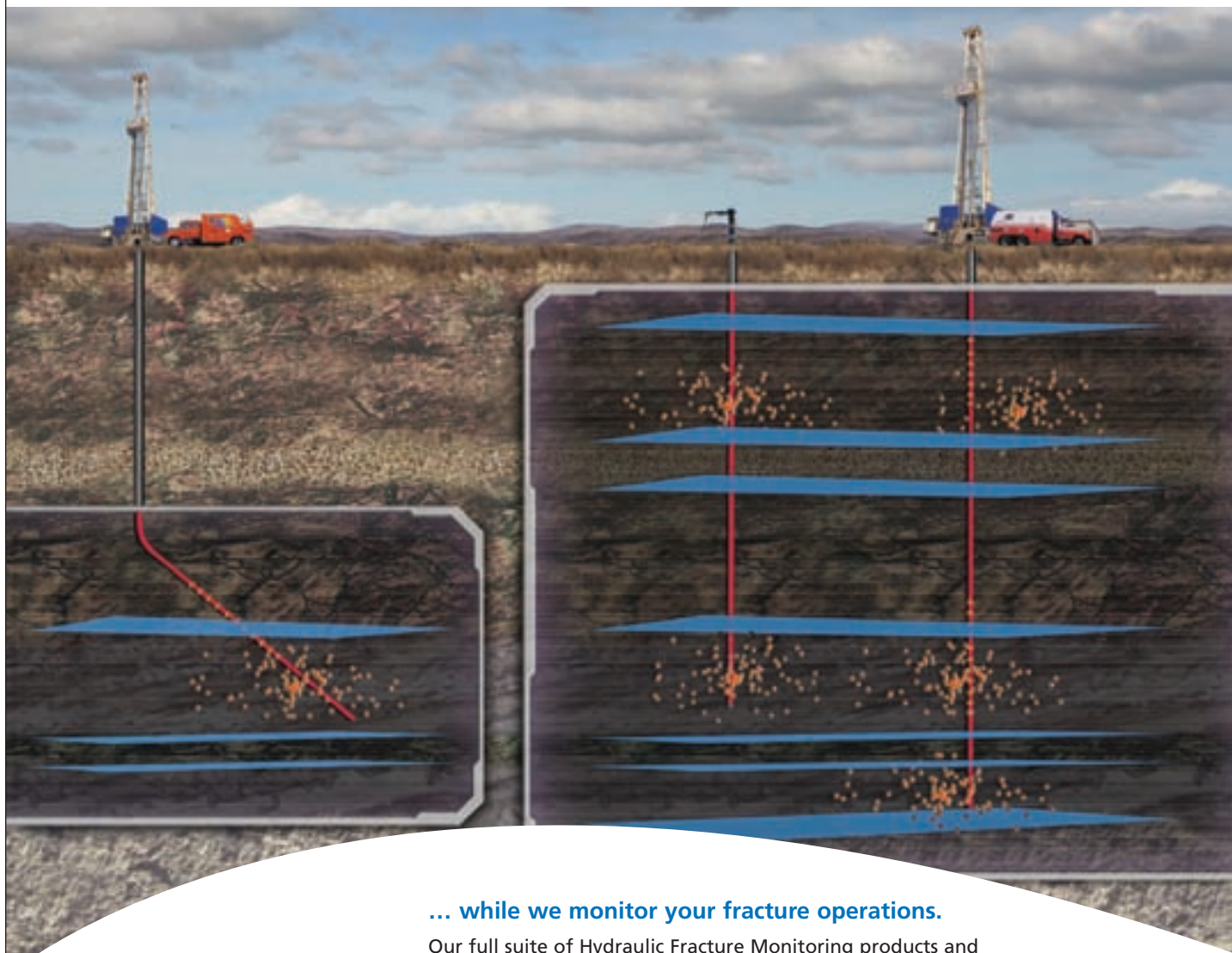
"The results of the project will be made public," Sonnenberg said. "The participants in the consortium will get the immediate results, but eventually all results will be released, including papers, thesis work, dissertations and so on."

At press time, consortium participants included CSM, Fidelity Exploration, Samson Resources, The Discovery Group and Hendricks and Associates.

Sonnenberg expressed confidence that the effort will attract additional members.

"Talks are in progress that look promising," he said. "Our main need is to fund students and other expenses we'll be incurring in this." □

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GCAGS Meeting Set Oct. 5-9

Multi-discipline diversity will be in the spotlight for this year's Gulf Coast Association of Geological Societies' annual meeting, set Oct. 5-9 in Houston.

"A Joint Meeting, A Shared Vision" is the theme, and GCAGS will be joined by the Gulf Coast SEPM, the Geological Society of America, the Soil Science Society of America, the American Society of Agronomy and the Crop Science Society of America in a conference "to highlight and stimulate discussions in areas of common interest" among the groups.

Details can be found online at <http://www.gcags2008.com/GCAGS%202008/Home.html>.

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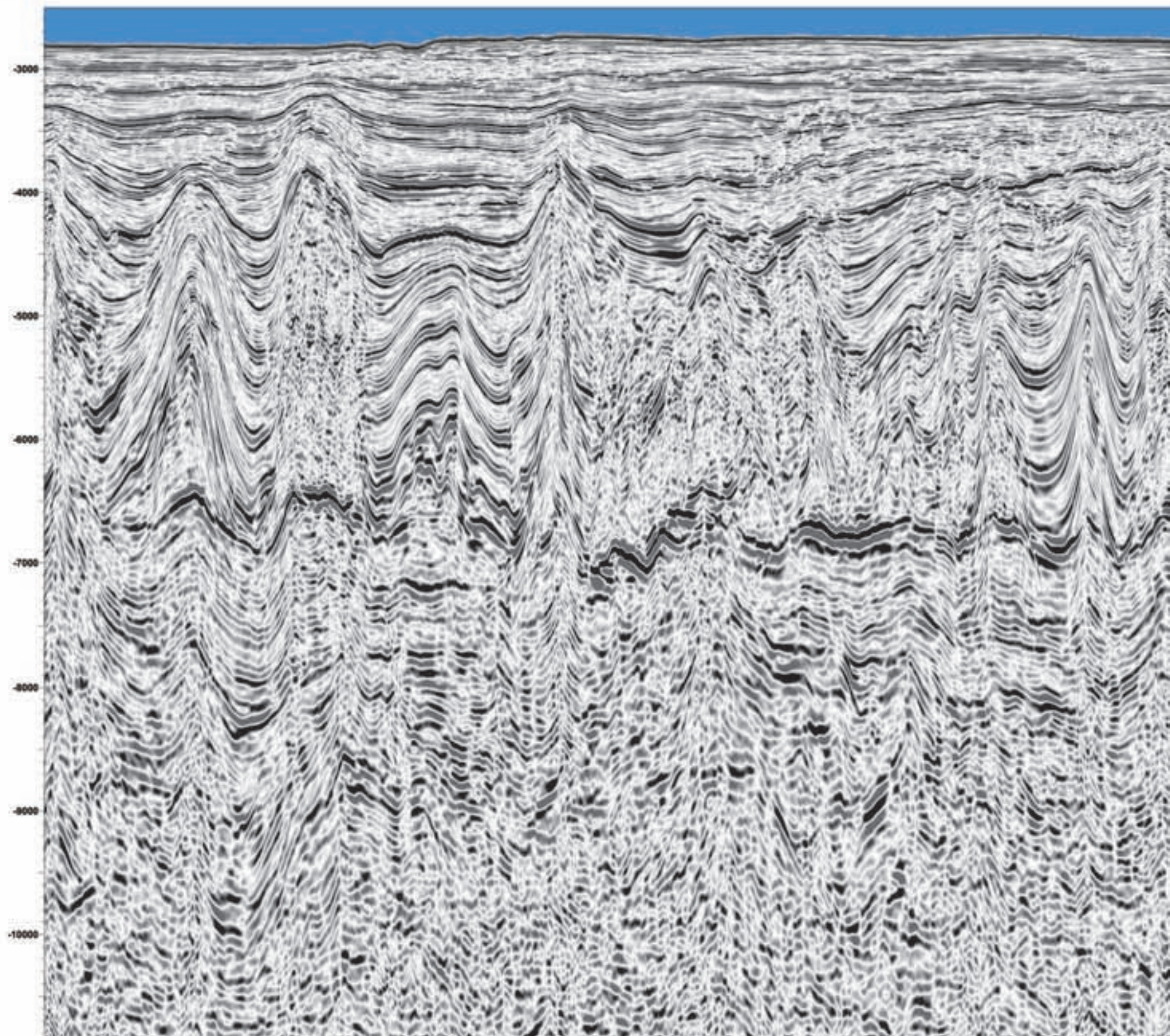
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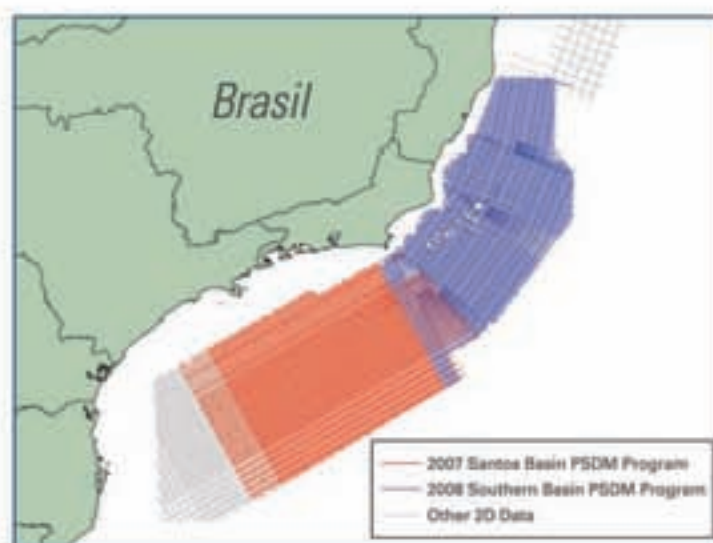
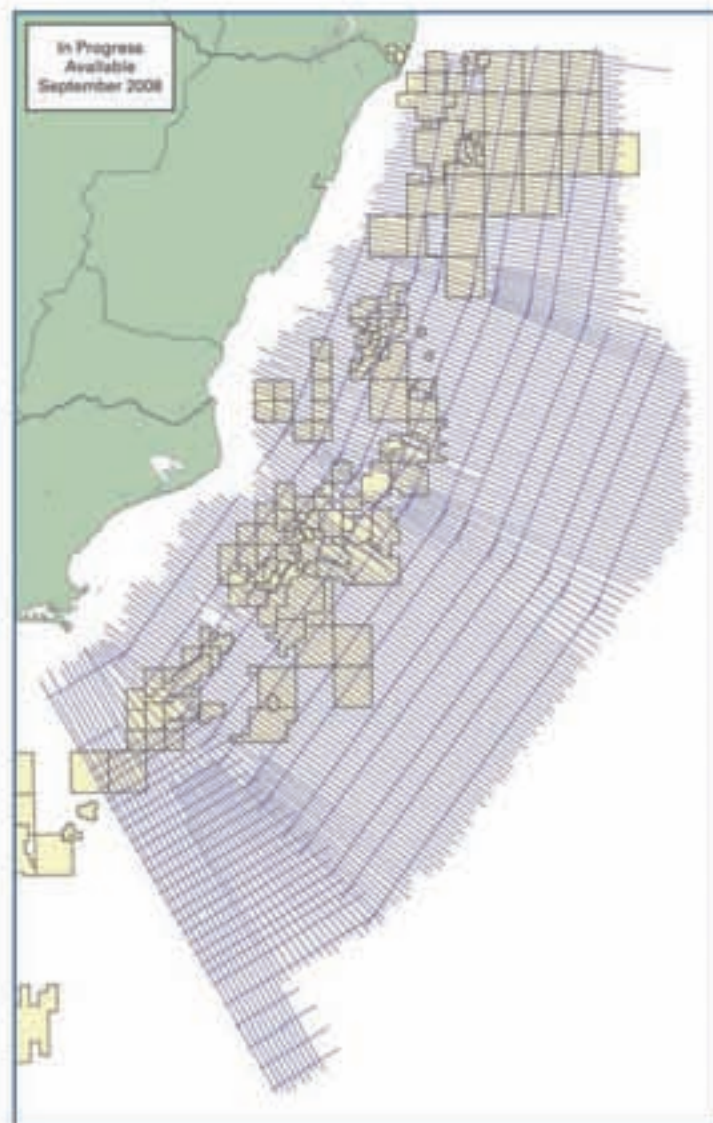
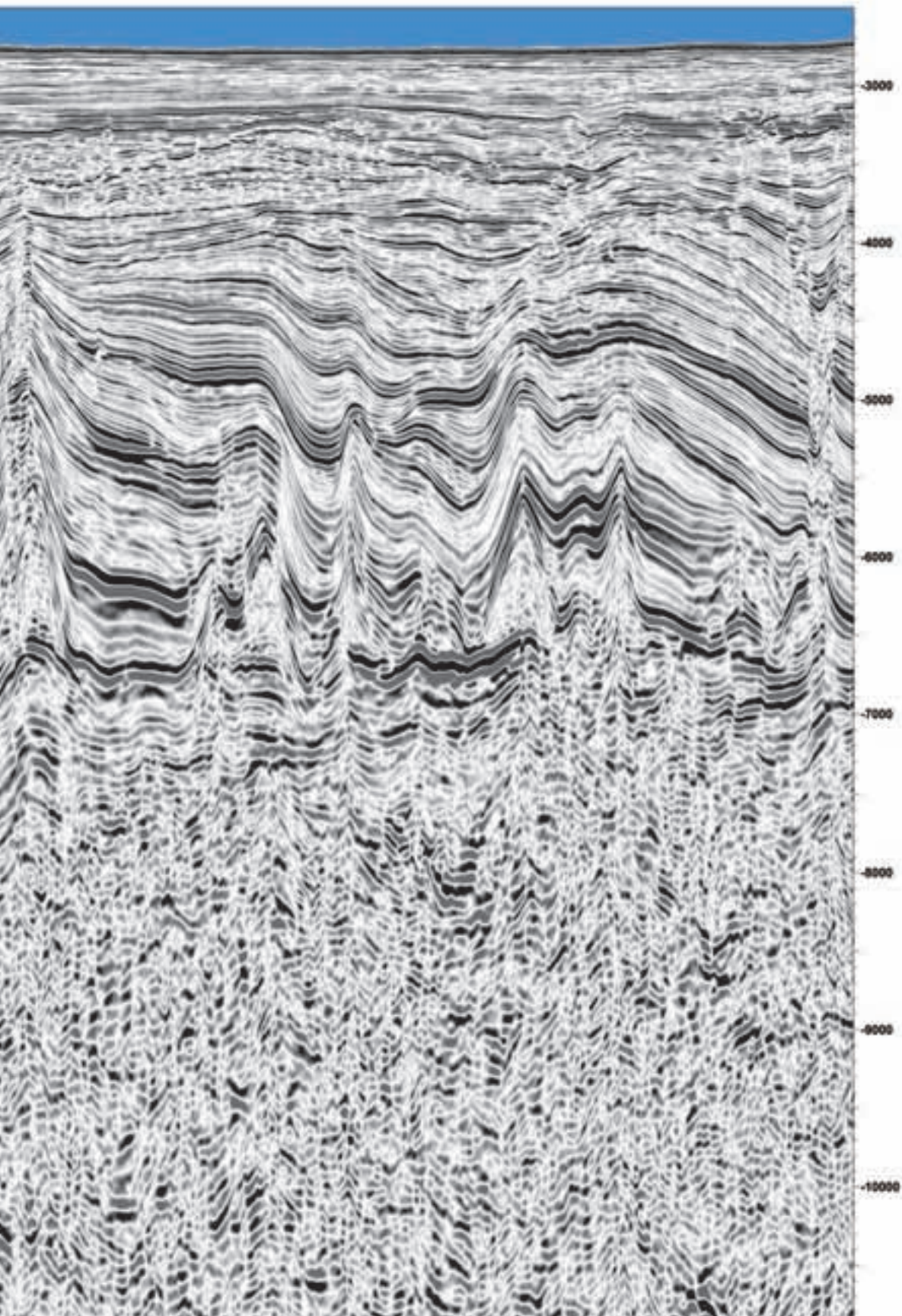


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*A positive image of geoscientists***Visiting Geologists at Forefront**

By LOUISE S. DURHAM
EXPLORER Correspondent

AAPG's popular, long-successful Visiting Geoscientist Program (VGP) is perhaps more important today than ever before as companies scramble to find and encourage new talent to keep the vital oil and gas industry running at top speed.

The VGP was developed in 1974 by AAPG's academic and industrial advisory committees to give students an opportunity to meet practicing geoscientists and to discuss geoscience career options. More than 200 colleges and universities have participated in the continually expanding program, which is funded via the AAPG Foundation.

The VGP's principle objective is to provide a means for better communication among students, faculty members, university administrators and geoscience professionals.

"The VGP introduces students to career paths and shows them how to prepare for their future in geology and geophysics," said Chuck Caughey, outgoing chair of the VGP Committee. "Additionally, interaction with faculty and administrators provides guidance regarding courses and field experiences needed by students to land jobs and become effective geoscientists.

"The program fosters a positive image of geoscience professionals and demonstrates advantages of active participation in AAPG."

Caughey noted that the number of VG visits increased from 47 to 63 for 2007-08, exceeding the goal set by the AAPG Executive Committee.

Technical presentations by the VGs can



Photo courtesy of Chuck Caughey

Fred Schroeder, a Houston-based VGPer, initiated a series of short courses that have become very popular with students.

include a variety of topics, such as environmental geology, seismic stratigraphy, sequence stratigraphy, hydrogeology, energy minerals and more. The business aspects of the industry often are addressed as well.

Arranging VG visits entails connecting the geoscientist volunteers with students and university officials worldwide – not always an easy task in past years.

In order to facilitate the effort, the VGP committee recently expanded to include one designated VG coordinator in each of the six AAPG Sections in the United States as well as in the six international Regions.

"The challenge is to connect people

who need the service with those who can provide it," Caughey said. "We have a lot of willing visiting geoscientists and a lot of universities that want someone to come and tell them about geoscience careers – it's a matter of connecting the dots.

"It's very effective to have local representation," he said. "These are people who know the universities and know who may be traveling into their area and can arrange visits.

"Speakers often can make multiple visits when in one area."

The VGP has proved to be high impact in terms of getting students involved in careers and in professional activities, and it

provides a boost for student chapters, according to Caughey.

He noted that when he is on campus in the role of a VG, he takes advantage of the opportunity to show the students how to do many things on their own, such as locating and securing speakers.

"The ultimate result is the students help themselves," he said. "The universities provide a fine technical education, but the VG program helps the students build soft skills in putting together budgets, inviting speakers, making cold calls – the things that help them develop professionally."

The visiting geoscientist can play a vital role telling students what companies look for when they interview, and also informing administrators and professors about what the industry wants to see in students and, in turn, help to make sure certain courses are available.

One of the issues confronting the VGP Committee members has been the need to get the geoscientists into new areas, such as Africa, South America and even some parts of the United States.

"Now that we have volunteer coordinators who live in those areas, they can take responsibility for coordinating visits there," Caughey said, "and it's becoming a much broader program.

"The program has expanded not just by moving into new areas and reaching new universities," he said. "It's also expanded in terms of going beyond the typical VG one-hour technical presentation and one-hour discussion on careers and lab visits and those sorts of things.

"In some cases, we're now able to offer short courses as well." □

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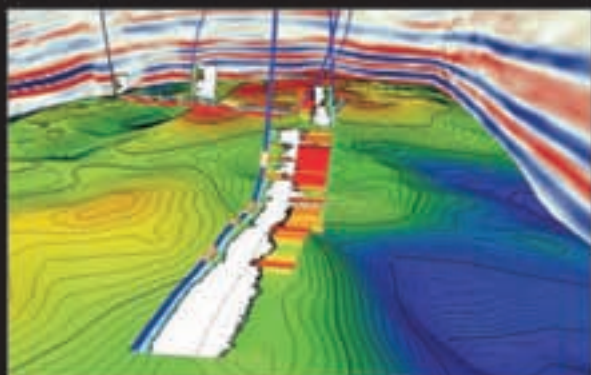
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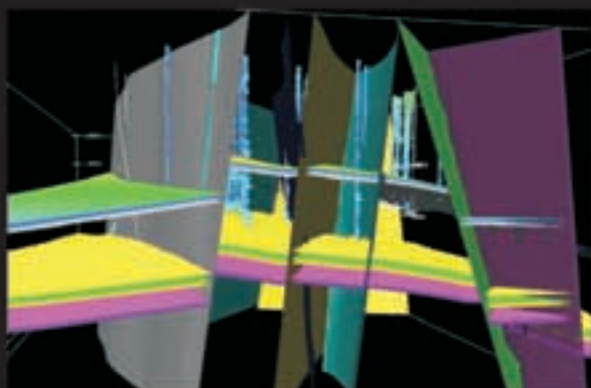
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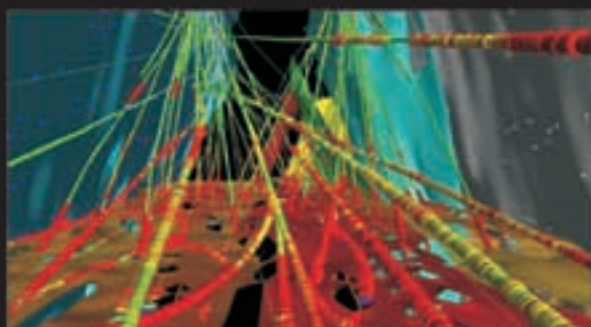
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Back to the basics – innovatively

NAPE Forum to Look Beyond Shale

By LOUISE S. DURHAM
EXPLORER Correspondent

When they said something new and innovative would be included in the forum at this year's Summer NAPE confab in Houston, they weren't kidding.

"Maximizing North American E&P Opportunities Through Innovation" is the theme for this year's forum, set Aug. 26, the day prior to the two-day prospect exhibition.

The day-long event, sponsored by IHS Energy and IPAA in conjunction with NAPE, will be chaired by IHS' Bob Fryklund and Pete Stark, both AAPG members.

Fryklund outlined the three panel sessions included on the schedule:

✓ U.S. regional highlights – including the Appalachians, Rocky Mountains and the Mid-Continent regions.

✓ Southern United States – encompassing the Gulf Coast and offshore.

✓ Technology innovations – to include production enhancement, geochemistry applications, reservoir characterization and its relationship to completions.

In keeping with the custom of the NAPE forums, a session featuring prospect promotion presentations will close the day's activities.

"Among our goals is to highlight there is potential in North America still – and where the opportunities are," Fryklund said.

"We want to show that many projects are moving forward because of the combination of innovation and technology, and we want the audience to get it from the bottom up – from the operators' experiences.

"We hope to highlight some places where people are not currently working."

Technology and Innovation

Expect some meaningful discussion regarding the possibility of tools for

technology and innovation that perhaps have escaped notice, as well as those gizmos that are well known but have been languishing on a back shelf for some time.

Fryklund noted that with a little tweaking, some tools from the past could have a purpose in today's activity.

For an example, he cited an old tool that had been used for measuring water saturation that went in the closet for awhile and has now re-emerged for application in heavy oil areas for the most part.

Unconventional resource plays are the hot story in North America today, but the forum will emphasize that unconventional is not the only game in town. The Gulf of Mexico shelf, for instance, is still a very active area despite the thinking among some industry folks that this region is so yesterday.

"We hope to get that message out that this is still a vibrant region," Fryklund said.

Another message you'll hear is that the resource plays can be market changers.

"Before the Barnett, for example, Dallas was a net importer of natural gas," Fryklund said. "After the Barnett, it became a net exporter, and all the gas not needed had to be re-routed so it makes for a new market change as far as pipelines, infrastructure and the like.

"Another thing we'll highlight is some of the challenges to executing that are coming up," Fryklund said. "This is not especially new but it's elevating – such as the Rockies, where we're starting to see more discussion on the trade off of environment versus energy. We'll highlight issues and (places) where some are more elevated than others."

Rock Solid

It's also planned that the forum will include a look at the thorny issue of capacity – in terms of people as well as goods and services – and how it impacts the action from a deliverability standpoint.

"We have abundant resources," Fryklund said. "It's a matter of figuring how to deliver them to the right markets.

"There ARE a lot of impediments to that delivery, including access and infrastructure."

It is noteworthy that a part of the forum will home in on the fact that the rocks once again are extremely important.

"Back to the basics is the big thing that everyone's starting to do," Fryklund said, "and that's pushing things to a new level as far as data goes. Each piece of data may unlock something new – especially in a lot of these old places where people took a sort of cursory look at things in the past and now are taking a detailed look."

The sponsors of the forum are optimistic that these annual events will:

✓ Encourage some participants to venture out in a new direction for a new play.

✓ Assist them to be more efficient working in a current play.

The forum's big tie-in to the main NAPE event, i.e., the two-day prospect expo, is that it can serve as a platform for people who are going to spend the following two days wheelin' 'n' dealin' as they peruse the varied prospect/investment opportunities on display.

"It can give them a framework for their regions and prospects and to tie these things in," Fryklund said.

"When folks don't have the regional capabilities in-house and they go down and look at prospects and plays, they'll have a better regional context by attending the forum." □



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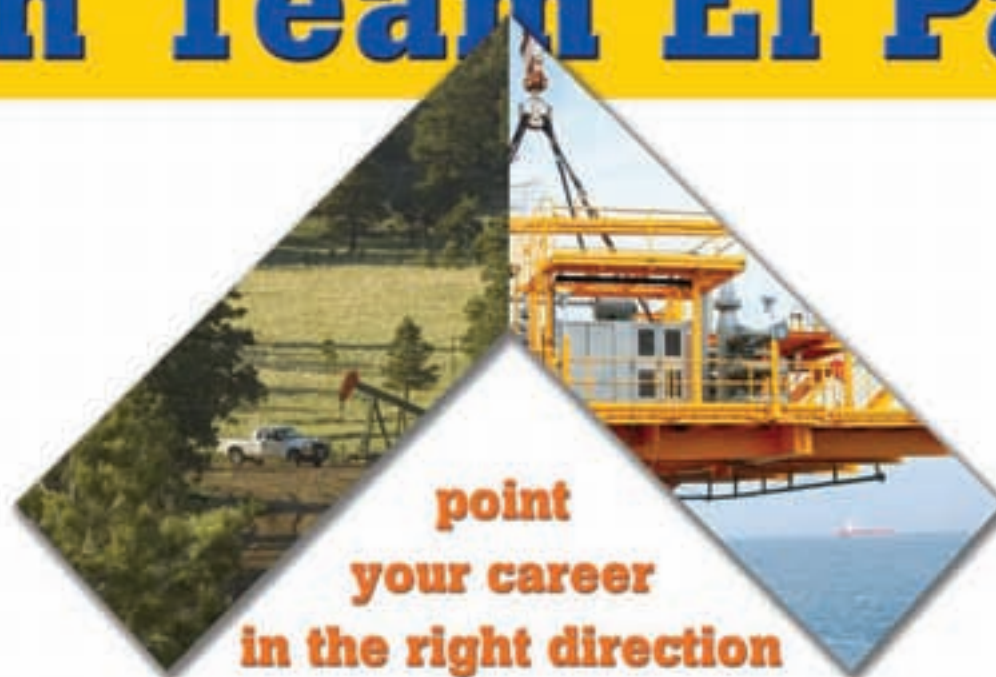
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GEOPHYSICALcorner

Getting Under Surface Challenges

(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 column is the first of a two-part look at "Exploring Beneath High-Velocity Surfaces.")

By BOB HARDAGE

In general, the quality of conventional P-wave seismic data is poor when data are acquired across areas where high-velocity rocks (primarily carbonates and basalts) form the exposed, first-layer of the Earth.

Some basins that have high-velocity rocks exposed at the surface have deeper layers with good oil/gas potential. Examples would include:

- ✓ Large areas of Argentina, Paraguay and Brazil (basalt outcrops).
- ✓ The Val Verde Basin and other areas of West Texas (carbonate outcrops).

Numerous other carbonate-covered and basalt-covered exploration areas could be listed.

Explorationists working in these high-velocity outcrop areas are frustrated by their inability to acquire seismic data that have signal-to-noise character sufficient to see and map deeper hydrocarbon plays.

This month's article is the first of a two-part series that will examine some principles of seismic imaging in areas where the seismic propagation velocity in

the shallowest Earth layer is greater than the velocity in the layers immediately below the surface layer.

In this first article, we consider the question "Does the downgoing compressional (P) wave successfully penetrate a high-velocity surface layer and illuminate deeper targets?"

* * *

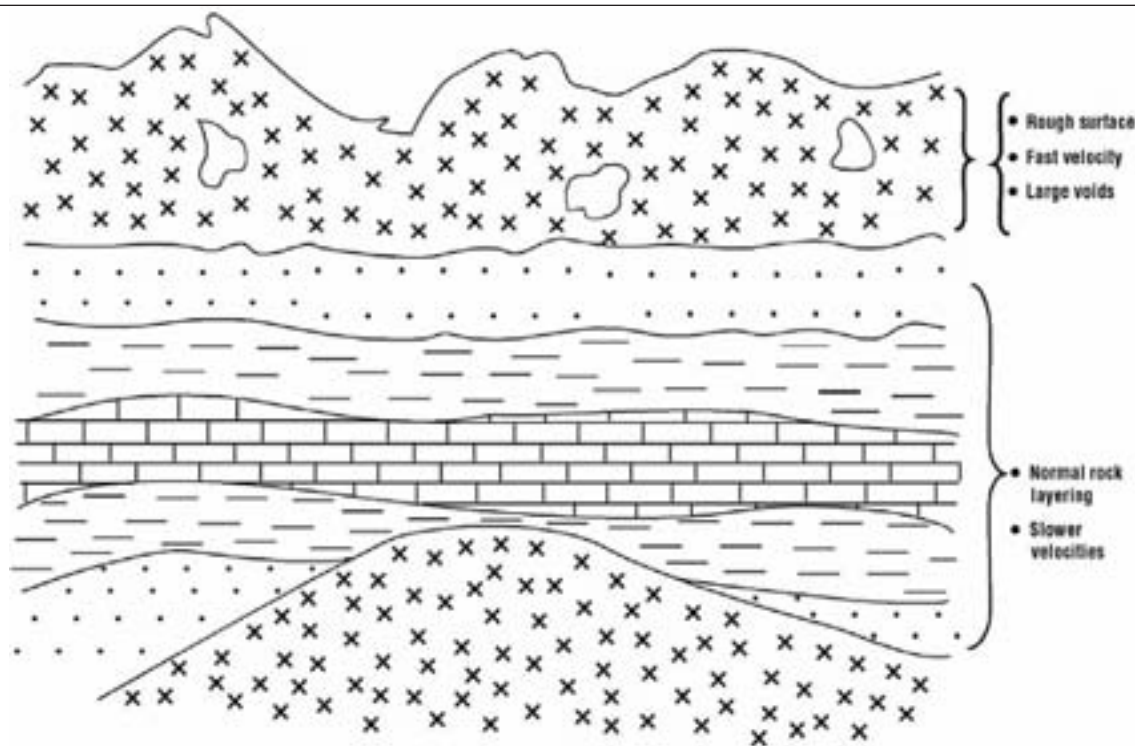
A generalized picture of the geology that needed to be imaged in one basalt-covered area is shown as figure 1.

The Earth surface here was covered by a thick basalt layer characterized by a fast seismic velocity, a rough surface and numerous large internal voids. Normal

siliciclastic and carbonate rock layers existed below this exposed basalt. The seismic propagation velocities in these deeper shale, sandstone and carbonate rocks were less than the propagation

continued on next page

Figure 1 – Generalized geological model of the geology associated with one basalt-covered surface where deep oil reservoirs cannot be seen with surface-based seismic sources and receivers.



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PARCEL 2

Parcel 2 is in the western region of the Scotian Basin, 275 km southwest of Sable Island in water depths of 150-2300m. There is considerable hydrocarbon potential within the reef margin facies of the Jurassic Abenaki formation - directly analogous to the Deep Panuke gas discovery with 659 billion cubic feet (mean) of recoverable gas. Wells targeting the Abenaki carbonate bank located on and near the parcel have encountered porous dolomitized intervals. Potential for Tertiary age turbidite fan complexes exists, such as those interpreted on Exploration Licence 2407 directly adjacent to the parcel. A number of salt-cored structures have been observed, outboard of the carbonate bank, with potential for deep water carbonate or draped clastic reservoirs.

Geological and geophysical data about the parcels, and regulatory information about offshore Nova Scotia can be found at www.cnsopb.ns.ca.

The Board is the independent joint agency of the Governments of Canada and Nova Scotia responsible for the regulation of petroleum activities offshore Nova Scotia.

Exploration Licences for these parcels include new terms and conditions, for example:

A lower minimum work expenditure bid, reduced from \$1,000,000 to \$500,000.

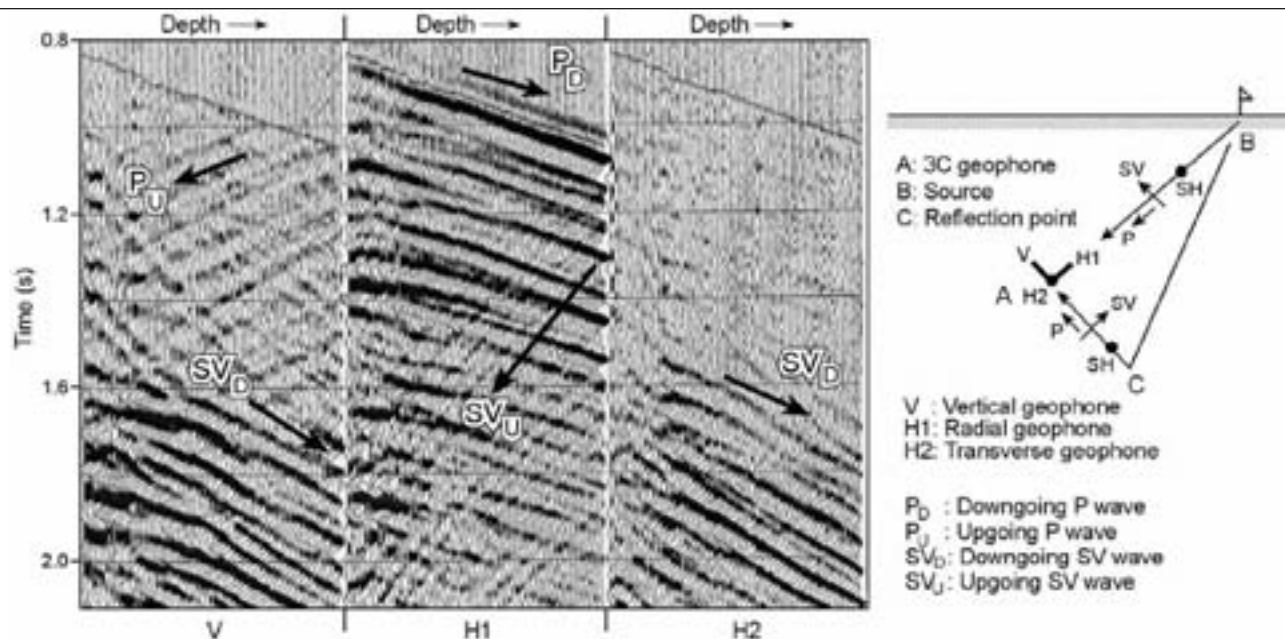
By posting \$50,000 upfront, the work deposit is deferred to the end of the third year.

A 150% credit on allowable expenditures approved in the first three years.

Deep water parcels allotted an extra year in Period 1 to account for the challenges of exploring in deeper waters.

Bids must be received by 4:00 p.m. AST, October 30, 2008. | www.cnsopb.ns.ca

Figure 2 – VSP data acquired in a well that was drilled through the basalt layer and into the interval where the hydrocarbon play was focused. All data are recorded below the surface basalt layer. These data confirm that the downgoing wavefield illuminates deep targets, and that robust upgoing reflections are created. The diagram on the right shows the orientations of the particle-displacement vectors (short arrows) associated with downgoing and upgoing raypaths. The large arrows atop the data panels identify downgoing and upgoing P and S events.



continued from previous page

velocity in the basalt.

Oil production had been established across this particular area by random drilling, without the aid of seismic data, because conventional P-wave seismic data were too noisy to define drilling targets.

Because random drilling is not an efficient or cost-effective option for developing a prospect, the operator decided to acquire offset-source VSP data in several wells to attempt to image across interwell spaces and to develop a better exploration model.

VSP data acquired in one well are displayed as figure 2 (above) after considerable data processing has been done to isolate downgoing and upgoing P and S (shear) wave modes.

The seismic source was a vertical vibrator offset about one kilometer from the well – the same source used in several failed attempts to acquire usable surface-based P-wave data across the area.

These VSP data show several important facts, namely:

✓ A robust downgoing P wave (center panel), as well as a strong downgoing SV wave (left and right panels), travels through the deep, slower-velocity layers.

All doubts are removed about the possibility that the downgoing source wavelet does not penetrate the surface basalt layer and illuminate deeper geology. A good-quality illuminating wavelet reaches all target depths.

✓ Good-quality upgoing P-wave (left panel) and converted-shear (SV) reflections (center panel) are generated at several deep interfaces, including interfaces associated with critical reservoir intervals.

At this point we know that the deep geology has been illuminated and that reflection events from our primary targets head back toward the Earth's surface. Yet these reflections cannot be recognized by surface-positioned receivers.

Why not?

We appear to have isolated the imaging problem to something that occurs in the local vicinity of the surface receivers.

Why is the signal lost when it arrives at the surface? □

Next month: A look at what appears to be the cause of this poor data quality – and one option for resolving the imaging dilemma.



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1 Potential Supply of Natural Gas in the U.S., Golden, CO, Sept. 2007; Potential Gas Agency, Dec. 2006 • 2 U.S. Dept. of Energy, EIA: "Natural Gas Consumption by End Use" and "U.S. Natural Gas Imports by Country," 2007 http://tonto.eia.doe.gov/dnav/ng/ng_move_imp_c_s1_a.htm; 2006 data • 3 According to the Department of Energy. Based on \$115 per barrel of oil.

WASHINGTONwatch

SEC, 'Use It or Lose It' Tops Agenda

By DAVID CURTISS
GEO-DC Director

The U.S. Securities and Exchange Commission (SEC) continues its march to modernize oil and gas reserves disclosure rules for companies traded on U.S. stock exchanges.

On June 26 the commission published a rule proposal on its Web site. The 172-page proposal suggests revisions to update and modernize oil and gas reporting requirements, and to "provide investors with a more meaningful and comprehensive understanding of oil and gas reserves." It's been a long time coming,

according to many industry veterans. The current requirements were adopted nearly three decades ago, and have not kept pace with industry practice and technological advances.

The proposed rule seeks to remedy that (see related story on page 48).

"We cannot overstate the importance of these developments, which will affect most AAPG members," said past AAPG



Curtiss

president Pete Rose. "These proposed rule changes represent a long sought-after and significant advancement, and AAPG members, together with their SPE colleagues, were instrumental in helping to catalyze and advance it.

"This is an excellent example of how AAPG can truly serve the interests of its membership," he said.

Publication of the rule proposal opens a 60-day public comment period. The SEC solicits answers to specific questions in the document and invites other comments and suggestions on the proposed rule.

AAPG President Scott Tinker has

asked the AAPG Ad Hoc Committee on SEC Response to evaluate the rule proposal and prepare a comment on behalf of the Association. Recognizing the important and historic opportunity to help improve and modernize the SEC reporting rules, each member of the committee has again volunteered their time and effort to make this contribution.

The AAPG Executive Committee will review and approve the comment prior to submission.

In addition, AAPG members should consider contributing their own expertise and perspectives on this topic with a personal comment. The GEO-DC Web page (www.aapg.org/geodc/) has a link to the SEC Web site where you can find additional information and offer your thoughts.

The deadline is September 8, 2008.

* * *

The Responsible Federal Oil and Gas Lease Act (H.R. 6251), authored by Representative Nick Rahall (D-W.Va.), chairman of the Natural Resources Committee, was the focus of much GEO-DC activity in the weeks leading up to Congress's July 4 recess.

Dubbed the "use it or lose it" bill, its intent was to stop oil and gas companies from "stockpiling" federal leases and "holding back domestic production" from those leases while "enjoy[ing] world record profits."

Specifically, the bill:

- ✓ Directed the Secretary of Interior to ensure that oil and gas companies were "diligently developing" any federal oil and gas leases they held.

- ✓ Prohibited the secretary from leasing additional federal acreage to lessees that were not producing or "diligently developing" existing leases.

- ✓ Shortened all lease terms (both on- and offshore) to five years with increasing rental rates for each additional one-year extension (if granted).

There were reports that the final bill extended the initial terms to 10 years, but that version of the legislation was not available for review at press time.

The origin of this legislation was two special reports prepared by staff for the House Committee on Natural Resources. Among other points, these reports suggest that:

"... Combined, oil and gas companies hold leases to nearly 68 million acres of federal land and waters that they are not producing oil and gas ... Oil and gas companies would not buy leases to this land without believing oil and gas can be produced there, yet these same companies are not producing oil or gas from these areas already under their control.

"If we extrapolate from today's production rates on federal land and waters, we can estimate that the 68 million acres of leased but currently inactive federal land and waters could produce an additional 4.8 million barrels of oil and 44.7 billion cubic feet of natural gas each day.

"That would nearly double total U.S. oil production, and increase natural gas production by 75 percent ..."

Thus, the committee reasons, industry should produce these "extrapolated" reserves on acreage it already holds before receiving leases to

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300 sq mi - In processing



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Products Available

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- Magnetic Gradiometry
- Gravity
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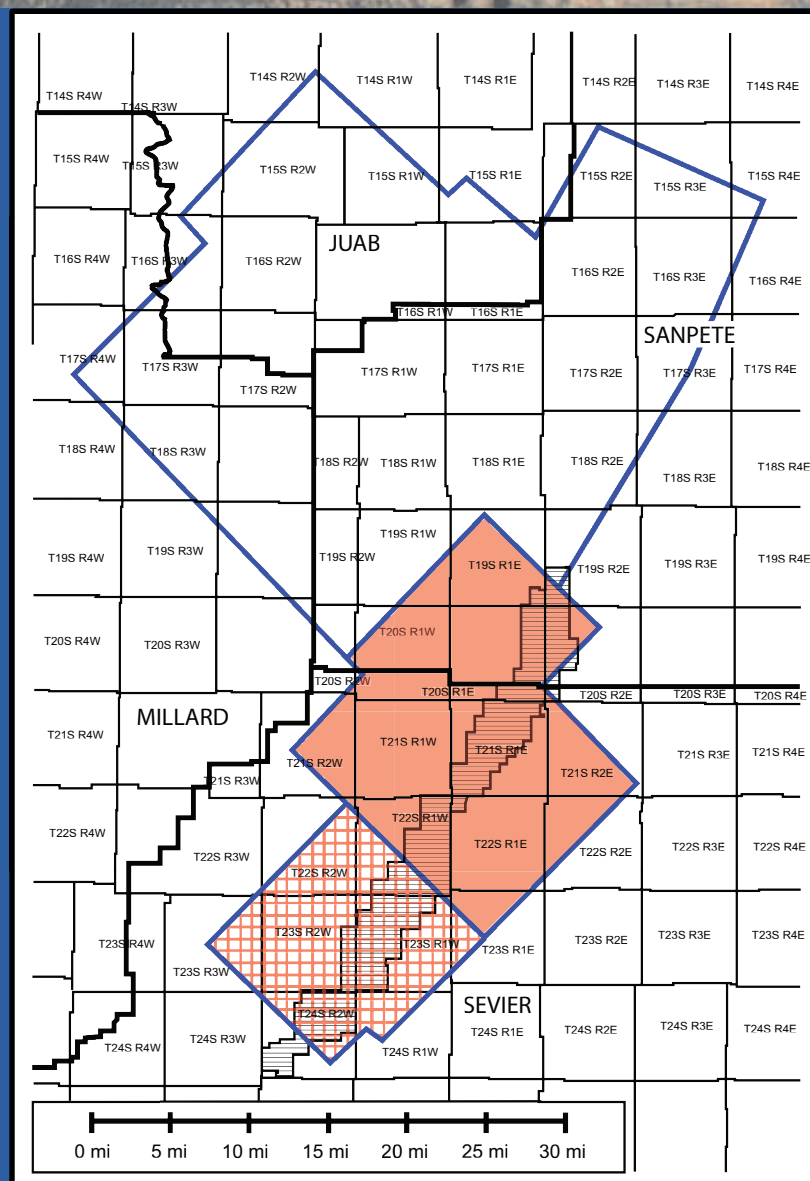
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Members Invited to Be Part of CVD

This year's Geo-Congressional Visit Days (geoCVD) will be held Sept. 8-10 in Washington, D.C., and interested AAPG members are invited to participate.

Deborah Sacrey, chair of AAPG's Washington Advocacy Group, said geoCVD is an effort by the American Geological Institute, working with AAPG and several other member societies, to bring members to Washington to tell Congress about the importance of the geosciences.

She said the event consists of two-and-a-half days of geoscience briefings, which includes meeting with the respective congressional delegations and possibly one or two



Sacrey

more of their members to ensure representation.

A limited number of spaces are available. To register, contact David Curtiss at (202) 684-8225, or dcurtiss@aapg.org. □

key federal agencies.

Sacrey noted that AAPG does not provide funding for members' participation at geoCVD, but divisions and Sections can consider sponsoring one or

Washington

from page 44

additional federal lands.

While this makes for snappy political rhetoric, it doesn't reflect geological reality or the process of finding oil and gas. Note also that none of the facts presented in these reports are referenced, and the committee held no hearings to formally gather information and publicly assess the situation.

* * *

Seeking to provide lawmakers with some basic information about how we go about finding oil and natural gas, then-AAPG President Will Green sent a letter to Speaker Nancy Pelosi (D-Calif.), Majority Leader Steny Hoyer (D-Md.) and Minority Leader John Boehner (R-Ohio) on June 23, 2008.

In the letter Green talked about the geological and engineering work that must be done long before a drill rig shows up on site.

He concluded the letter, "... Policies that increase exploration costs, decrease the available time to properly evaluate leases and restrict access to federal lands and the Outer Continental Shelf do not provide the American people with short-term relief from high prices and undermine the goal of increasing stable long-term supplies."

The letter was published as an Op-Ed commentary and was quoted by *USA Today*.

The letter's complete text is on the GEO-DC Web site (www.aapg.org/geodc/).

The letter represents the type of science-based, factual information and understanding that organizations like AAPG can uniquely provide. And the favorable response by the policy community confirmed the importance of making this contribution to society.

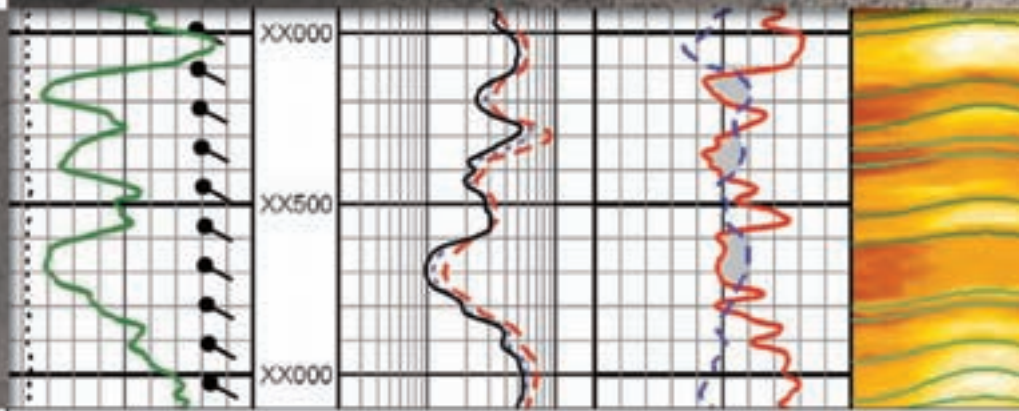
In order to act on several energy bills before leaving for the July 4 recess, House leaders rushed the "use it or lose it" bill to the floor on June 26, under a parliamentary procedure known as suspension of the rules. This limited time for debate to 40 minutes and prohibited amendments to the legislation – but in return the bill had to receive a two-thirds majority, rather than simple majority, for passage.

During the ensuing debate on the House floor, members of Congress repeatedly referred to AAPG and quoted from Green's letter.

The outcome was uncertain as the vote began. But at 5:44 p.m., as the Speaker's gavel banged the vote to a close, the final tally was 223 to 195. The bill failed to reach a two-thirds majority.

(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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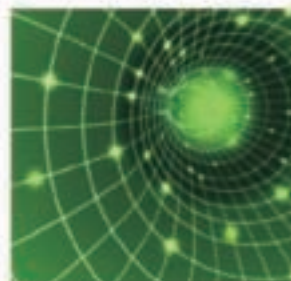
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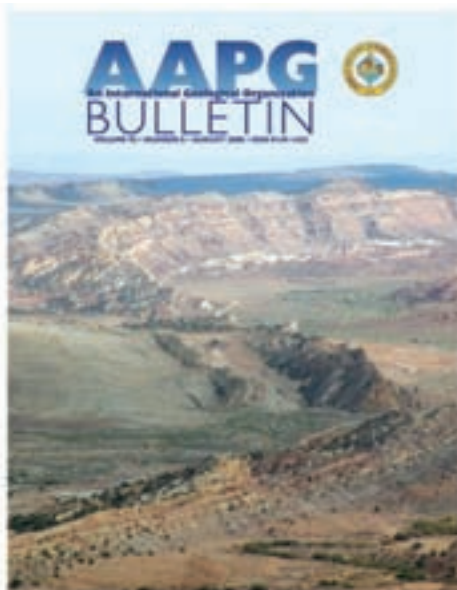
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Eastern Section Meets Oct. 11-15

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

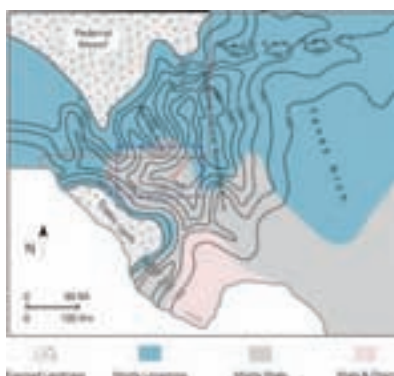
The meeting, held jointly with the Society of Professional Engineers, will feature more than 80 technical papers, field trips, short courses, workshops and more than 50 exhibitors.

More information can be found online at <http://www.aapgspe2008.org/index.htm>.



The August 2008 cover of the AAPG Bulletin

More science than you can shake a pick at.



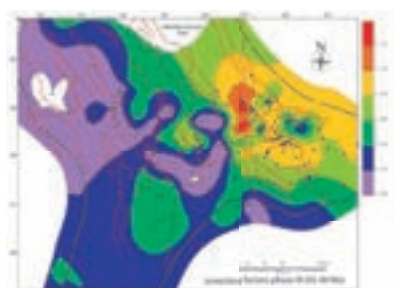
E&P NOTE

Hydrocarbon potential of the Barnett Shale (Mississippian), Delaware Basin, west Texas and southeastern New Mexico

Travis J. Kinley, Lance W. Cook, John A. Breyer, Daniel M. Jarvie, and Arthur B. Busbey

The Mississippian Barnett Shale in the Delaware Basin (Texas and New Mexico) has the potential to be a prolific gas producer. Realizing the potential of these resources depends upon current efforts to optimize drilling and completion techniques for this shale-gas play.

Manuscript received October 26, 2007



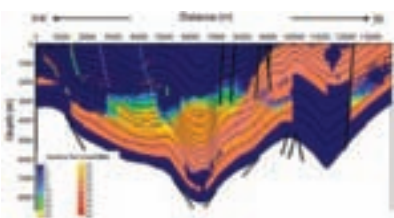
GEOLOGIC NOTE

Tectonics and subsidence evolution of the Sirt Basin, Libya

Abdulbasset M. Abadi, Jan-Diederik van Wees, Paul M. van Dijk, and Sierd A. P. L. Cloetingh

The Sirt Basin, Libya, has been the target of intensive exploration and production, yet, little is known on its stratigraphy and structure. Backstripping analysis provides new constraints on basin development and reveals four distinct tectonic phases from the Late Jurassic to present.

Manuscript received June 20, 2006



ARTICLE

Predicting methane accumulations generated from humic Carboniferous coals in the Donbas fold belt (Ukraine)

Dani Alsaab, Marcel Elie, Alain Izart, Reinhard F. Sachsenhofer, and Vitaliy A. Privalov

Numerical modeling of the Donbas fold belt, Ukraine, is used to reconstruct its burial and thermal history, as well as to evaluate the factors controlling coalification patterns. Two thousand billion cubic feet of methane are predicted within the main accumulation zones.

Manuscript received May 24, 2007

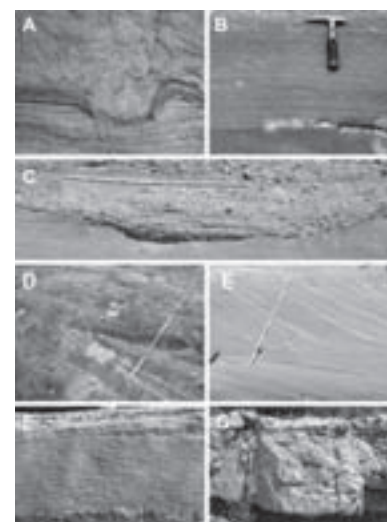
ARTICLE

Architecture and stratigraphy of alluvial deposits, Morrison Formation (Upper Jurassic), Utah

Audun V. Kjemperud, Edwin R. Schomacker, and Timothy A. Cross

A unique stratigraphic cross section containing braided stream and associated floodplain deposits is presented as a resource to geoscientists. In addition, these data highlight the architectural expression of changes in accommodation space versus sediment supply.

Manuscript received October 15, 2007



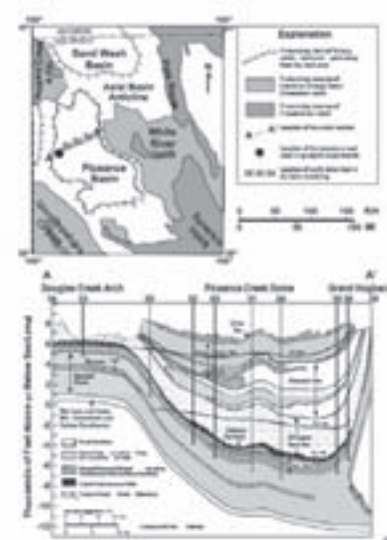
ARTICLE

Modeling of gas generation from the Cameo coal zone in the Piceance Basin, Colorado

Etuan Zhang, Ronald J. Hill, Barry J. Katz, and Yongchun Tang

Some of the largest unconventional gas resources in the Rocky Mountain region are sourced from the Cameo coal zone, Piceance Basin, Colorado. Quantitative evaluation of the generative potential indicates that this area has great potential to contain commercial accumulations.

Manuscript received February 1, 2006



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Modernizing urged

SEC Proposal Ready for Comment

By LARRY NATION

AAPG Communications Director

The SEC's rule proposal announced in late June reflects many comments and urgings made at the 2007 Multidisciplinary Reserves Conference sponsored by AAPG along with SPE.

At that two-day conference held in Washington, D.C., before an audience of geologists, engineers, SEC regulators, accountants, attorneys and bankers, speakers strongly noted that significant changes have taken place in the oil and gas industry since the adoption of the original reporting requirements more than 25 years ago, and urged changes.

The ability to accurately assess proved reserves is an important part of understanding any energy company's financial position.

The proposed rule was developed after the SEC issued a Concept Release in December 2007, six months following the conference, requesting public input on a list of specific questions.

The Commission received about 80 comments, including one prepared by the AAPG Ad Hoc Committee on SEC Response. The SEC drew upon these comments and suggestions as it

developed the proposed rule.

In a press release announcing the proposed rule, the SEC said "the proposed rule changes incorporate improved technologies and alternative extraction methods, and enable oil and gas companies to provide investors with additional information about their reserves.

"The more that precise, first-hand information from oil and gas companies is available to investors and the marketplace, the less that the marketplace is forced to rely solely upon information provided by speculators," the commission said.

"The ability to accurately assess proved reserves is an important part of understanding any energy company's financial position," said SEC Chairman Christopher Cox, who attended a reception during the 2007 conference, "but the current oil and gas disclosure rules often interfere with an investor's analysis because they are tied to outdated technologies."

John White, director of the SEC's Division of Corporation Finance and a speaker at the conference, added, "I am pleased that the Commission has acted on the staff's recommended proposals to modernize the reporting requirements for oil and gas companies. The proposed rule changes will allow oil and gas companies to determine their reserves in a manner that is consistent with existing technologies.

"The proposed changes also will require companies to provide additional information that will allow investors to better understand the reserve quantities and the implications of those reserves on future operations," White said.

The SEC's proposed rule changes include:

- ✓ Permitting use of new technologies to determine proved reserves if those technologies have been demonstrated empirically to lead to reliable conclusions about reserves volumes.

- ✓ Enabling companies to additionally disclose their probable and possible reserves to investors. Current rules limit disclosure to only proved reserves.

- ✓ Allowing previously excluded resources, such as oil sands, to be classified as oil and gas reserves. Currently these resources are considered to be mining reserves.

- ✓ Requiring companies to report the independence and qualifications of a preparer or auditor, based on current Society of Petroleum Engineers criteria.

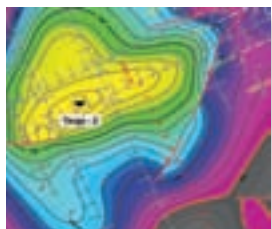
- ✓ Requiring the filing of reports for companies that rely on a third party to prepare reserves estimates or conduct a reserves audit.

- ✓ Requiring companies to report oil and gas reserves using an average price based upon the prior 12-month period – rather than year-end prices, to maximize the comparability of reserve estimates among companies and mitigate the distortion of the estimates that arises when using a single pricing date.

The full text of the proposing release to update disclosure requirements for oil and gas companies has been posted to the SEC Web site (www.sec.gov). □

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The North Sea after 40 years.

I am pleased to invite you this two-day conference in Oslo 6th and 7th October. The aim of the conference is to pose the question - After more than 40 years of varied upstream activity in the North Sea petroleum province what are the key learning to take forward into the future? A set of invited presentations will track the creation of the present day North Sea petroleum province through the decades, highlighting the critical factors for success and the opportunities and challenges ahead.

Geir Lunde, General Chairman

Day 1

Looking Back - History of the North Sea: Geology and E&P
A. Armour (Revus)

The Schoonebeek Field (past-present-future)
M. de Keijer (NAM)

The Groningen Field- Managing a Giant (past-present-future)
J. Steenbrink (NAM)

The Ekofisk Field (past-present-future)
H. Hermansen (ConocoPhillips)

Technology Enablers for the Successful development of the Brent Field (past-present-future)

Gulfaks Field - Towards 2030 (past-present-future)
P. Helland (StatoilHydro)

The Role and Status of E&P Technology from a North Sea Perspective: History and Future
S. Strandenes (PGS)

The Forties Field (past-present-future)
J. Crowley (Apache)

Elgin/Franklin: What Could We Have Done Differently?
E. Festa and O-P. Hansen (Total)

The Draugen Field:
Even On World Class Reservoirs People Make The Difference
N. A. Horvei (Shell)

Schiehallion Field
"invited" (BP)

The Ormen Lange Field
P. Kjernes (StatoilHydro)

Buzzard Soars To Success:
The Discovery and Development of a Billion Barrel Oil Field in a Mature Basin
M. Burdek (Nexen)

Day 2

Looking Forward - Future Challenges of North Sea
T. Dodson (Statoll)

The Luno Discovery and the Future of N/UK Exploration
H. Ronnevik (Lundin)

The Troll Field (past-present-future)
T. Madsen (StatoilHydro)

HR Perspectives on the North Sea Petroleum Industry
H. Aalheim (StatoilHydro)

The Next Generation's View of the Future
A. Korevaar/M. Nyrud (Shell/Sagex)

Environment In Focus
A. K. A. Sjøtveld (KonKraft)

A New Paradigm:
Oilexco, from New Entrant to the Most Active Driller in the UKCS
R. Christensen (Oilexco)

The Challenge of Deep HPHT Exploration
J. Mathew (ConocoPhillips)

New Technologies Employed with Success in the Danish Sector and the Management of Risk
M. Aagsen (DONG)

Heavier Oils: Moving From Unloved Resources to Reserves
S. Jenkins (Nautica)

Government: Denmark
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continued on next page

Program Set for Historic GEO India

AAPG will make major inroads into a new region in September as a co-organizer of a major, historic conference set in Greater Noida, New Delhi, India.

GEO India 2008, a new event set in a country that is at the center of global energy headlines, will be held Sept. 17-19 at the newly constructed Expo XXI.

This inaugural GEO India event, following the successful model set by the GEO Bahrain conferences, will feature a large exhibits hall and an extensive technical program built around the theme, "Investing in Geoscience to Secure the Future."

AAPG is a co-organizer with the Association of Petroleum Geologists-

India (APG), the Society of Petroleum Geophysicists-India and the Society of Petrophysicists and Well Log Analysts-India.

"GEO India will expand upon the highly successful APG conferences and exhibitions run since 2002," said D.K. Pande, director of exploration for the Oil and Natural Gas Corp. in India and chairman of the event's Executive Committee.

"With a highly technical conference program, workshops, field trips and an exhibition of international significance, we expect the event to help ensure that oil and gas professionals in India and throughout South Asia remain at the

forefront of the latest developments in our industry," he added.

The large program will cover the region's geology, exploration activities, technology and public policies, include sessions on:

- ✓ Petroleum Systems and Basin Analysis.
- ✓ Deep Water Slopes and Basin Systems.
- ✓ Structural Entrapment and Hydrocarbon Plays.
- ✓ Sediment Logical Processes and Stratigraphic Models.
- ✓ Reservoir Modeling and Characterization.
- ✓ New and Expanded Plays in Indian

Subcontinents and Global Basins.

- ✓ Alternate Energy Developments in the 21st Century.
- ✓ New Technology Leveraging in E&P Business.
- ✓ Frontier Exploration Areas in the Indian Subcontinent.
- ✓ E&P Business and Regulatory Policy in India.
- ✓ Hydrocarbon From Shale and Coal.
- ✓ Geospatial Technology and Astrogeology.
- ✓ Student Presentations.

Registration and details are available online at www.geo-india.com. Registering before August 21 can provide savings of up to \$125. □

continued from previous page

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The Foundation Trustees reported contributions totaling \$1,895,724 for the fiscal year ending June 30.

That total reflects the donations of 2,432 AAPG members, and the Foundation is very grateful for all who provided their support.

* * *

In other Foundation news, four new members recently were added to the AAPG Foundation Trustee Associates. They are:

- Lyle Baie, Canyon Lake, Texas.
- Bret Fossum, Houston.
- Scott Tinker, Austin, Texas.
- John Withrow, Oklahoma City

Trustees officials, who praised the strong support provided to the Foundation by the Trustee Associates, said the new members brought the group's total to 264.



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PROFESSIONALnewsbriefs

John Adamick, to senior vice president-geological products and services, TGS-NOPEC, Houston. Previously vice president-business development, TGS-NOPEC, Houston.

Michael A. Adams, to operations geologist, EnCana Oil & Gas (USA), Dallas. Previously senior geoscientist, Occidental Oil & Gas, Houston.

James Blankenship, to associate geologist, Chesapeake Energy, Oklahoma City. Previously graduate student, University of Texas at Arlington, Arlington, Texas.

Robert J. Brewer, region business development manager-Magnitude, microseismic, Baker Atlas, Houston.

Previously senior account representative-Borehole Seismic Services, Halliburton, Houston.

Edward C. Cazier, to senior geologist, Maersk Oil & Gas, Copenhagen, Denmark. Previously subsurface manager, TNK-BP, Moscow, Russia.

Karen El-Tawil, to vice president-business development, TGS-NOPEC Geophysical, Houston. Previously vice president-NSA sales, TGS-NOPEC, Houston.

Randall Ferguson, to environmental supervisor, Petroleum Development Corp., Denver. Previously environmental supervisor-northern Colorado, Colorado Oil and Gas

Conservation Commission, Denver.

Gary S. Grinsfelder, to president, TXCO Resources, San Antonio. Previously vice president-exploration, TXCO Resources, San Antonio.

Charles G. "Chip" Groat, to interim dean of the Jackson School of Geosciences, University of Texas at Austin, Austin, Texas. Previously John A. and Katherine G. Jackson Chair in Energy and Mineral Resources, University of Texas at Austin, Austin, Texas.

Stein Ove Isaksen, to vice president-NSA sales, TGS-NOPEC Geophysical, Houston. Previously vice president-Europe/Russia sales, TGS-NOPEC,

Oslo, Norway.

Martyn James, to senior geologist, Gaffney, Cline and Associates, Alton, England. Previously geologist, Martyn James Consulting, Silverthorne, Colo.

Peter S. Joslin, to exploitation manager, Venoco, Houston. Previously senior engineering economist, BHP Billiton Petroleum, Houston.

Robert S. Nail, to senior geologist, St. Mary Land and Exploration, Midland, Texas. Previously geologist, Chevron, Midland, Texas.

Douglas Neese, to Kansas asset manager, Ellora Energy, Boulder, Colo. Previously general manager, Anadarko Petroleum, Port of Spain, Trinidad and Tobago.

David J. Ninke, to vice president-exploration, Samson Oil & Gas, Golden, Colo. Previously senior geoscientist, Aspect Energy, Denver.

Debra P. Osborne, to senior geoscientist, COG Operating, Midland, Texas. Previously senior geologist, Pogo Producing, Midland, Texas.

Raymond M. Pierson, to senior geologist, reservoir services group, El Paso Corp., Colorado Springs, Colo. Previously geoscience data analyst-reservoir systems, Aera Energy, Bakersfield, Calif.

Pal D. Redly, to senior geophysicist, Lundin Petroleum, Geneva, Switzerland. Previously senior staff geophysicist, Shell Canada, Calgary, Canada.

Dan Rozman, to senior geologist, Noble Energy, Denver. Previously petrophysicist, BP America, Houston.

Kevin P. Turco, to senior consultant-geoscience, IRT Inc., Lakewood, Colo. Previously geological associate, BP Exploration and Production, Houston.

(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 from the AAPG Web site, www.aapg.org/explorer/pnb_forms.cfm.

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Every gift received is of vital importance to this program and all donors to the Distinguished Lecture/Instructor General Fund will receive recognition in the AAPG Explorer. Those who desire to become a major donor with a gift of \$300,000/\$350,000 to endow a Named Domestic Distinguished Lecture/Named International Distinguished Lecture, you will receive recognition in an exclusive article in the AAPG EXPLORER in addition to the listing in

the Foundation's Annual Report.

You may direct your tax-deductible contribution toward the AAPG Foundation "Distinguished Lecture/Instructor General Fund." Contributions are accepted by check, credit card by phone, or online at <http://foundation.aapg.org/contribute.cfm>.

To receive a 5-year pledge commitment form or for further details regarding the Distinguished Lecture/Instructor General Fund or Distinguished Lecture Named Endowment Funds, please contact Rebecca Griffin 918-560-2644.



MEETINGS of note

2008 U.S. Meetings

Aug. 22-24, AAPG Annual Leadership Conference, annual event, Tulsa.

Aug. 27-28, Summer NAPE (North American Prospect Expo), AAPL, annual event, Houston.

Sept. 3-7, AAPG Foundation Trustee Associates, annual meeting, Jackson Hole, Wyo.

Sept. 15-20, Association of Environmental and Engineering Geologists, annual meeting, New Orleans.

Sept. 21-24, Society of Petroleum Engineers, annual meeting, Denver.

* Sept. 24-27, National Association of

Black Geologists and Geophysicists, annual meeting, Atlanta.

Oct. 5-9, Gulf Coast Association of Geological Societies, AAPG, annual meeting, Houston.

Oct. 5-9, Geological Society of America, annual meeting, Houston.

Oct. 11-15, AAPG Eastern Section, annual meeting, Pittsburgh.

Nov. 9-14, Society of Exploration Geophysicists, annual meeting, Las Vegas.

2008 International Meetings

* Sept. 17-19, GEO-India, AAPG/APG//SPG/SPWLA, conference and exhibition, Greater Noida, New Delhi.

* Oct. 5-7, AAPG European Region Conference, Oslo, Norway.

* Oct. 5-8, Congress of the Balkan Geophysical Society, Belgrade, Serbia.

* Oct. 9-10, European Autumn Gas Conference, (EAGC), Düsseldorf, Germany.

Oct. 20-22, Asia Pacific Oil and Gas Conference (SPE), Perth, Australia.

Oct. 26-29, AAPG International Conference and Exhibition, annual meeting, Cape Town, South Africa.

Nov. 25-27, PETEX (PESGB), annual meeting, London, England.

* Dec. 3-5, International Petroleum

Technology Conference (AAPG/EAGE/SEG/SPE), annual meeting, Kuala Lumpur, Malaysia.

2009 U.S. Meetings

* Feb. 5-6, (North American Prospect Expo), AAPL, annual event, Houston.

* April 26-29, AAPG Southwest Section, annual meeting, Midland, Texas.

* May 2-7, AAPG Pacific Section, annual meeting, Ventura, Calif.

* May 4-7, Offshore Technology Conference, annual event, Houston.

June 7-10, AAPG Annual Convention and Exhibition, Denver.

* Aug. 27-28, Summer NAPE (North American Prospect Expo), AAPL, annual event, Houston.

* Sept. 20-22, AAPG Eastern Section, annual meeting, Evansville, Ind.

* Sept. 27-29, Gulf Coast Association of Geological Societies, AAPG, annual meeting, Shreveport, La.

Oct. 4-7, Society of Petroleum Engineers, annual meeting, New Orleans.

Oct. 7-11, AAPG Foundation Trustee Associates, annual meeting, Ponte Verde Beach, Fla.

Oct. 10-14, AAPG Mid-Continent Section, annual meeting, Tulsa.

Oct. 18-21, Geological Society of America, annual meeting, Portland, Ore.

Oct. 25-30, Society of Exploration Geophysicists, annual meeting, Houston.

2009 International Meetings

* March 3-5, AAPG Prospect & Property Expo-London, annual event, London, England.

* May 4-9, Canadian Society of Petroleum Geologists, Canadian Society of Exploration Geoscientists and Canadian Well Logging Society, annual meeting, Calgary, Canada.

May 24-27, Geological Association of Canada/Mineralogical Association of Canada, annual meeting, Toronto, Canada.

(* Denotes new or changed listing.)

Call for Abstracts

A Passion for the West Lives On. Are You In?

The Rockies are red hot and the AAPG Annual Convention and Exhibition (ACE), 7-10 June 2009 in Denver presents new opportunities for geosciences professionals to present and hear about the latest issues affecting exploration success. Cutting-edge geological and petroleum research is the cornerstone of ACE, offering E&P researchers and practitioners a platform to share important ideas, findings and case studies with peers and policy makers.

Whether you're passionate about unconventional reservoirs, subsalt plays or integrated work teams, you're invited to submit an abstract or abstracts for program committee consideration.

Abstract submittal opens 4 August at
www.aapg.org/denver. Are you in?



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East Texas Geological Society
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Houston Geological Society Bulletin
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More science than you can shake a pick at.

August 2008

Midland Valley Structure World

Welcome to the August edition of *Structure World*. In this month's column we introduce the new Move2008 brand to coincide with its July release and our interpreters tip looks at Measuring and Understanding Stratigraphic Thickness.

Move2008 - the wait is over!

On July 31st our new product Move2008 was released to all of our 2D Move, 3D Move and 4D Move maintained clients, complete with a new look.

move™
2008.1

Move2008 brings all of our software components together into one environment, with users benefiting from the ability to launch all of our software simultaneously, with 4D Move acting as the scenario analysis hub.



After installation users can access 2D Move, 3D Move and all modules of 4D Move free of charge for two months, providing the opportunity to discover the power of the new tools, increased functionality and extended workflows.

If you would like more information on how Move2008 can enhance your workflows, contact us through: move2008@mve.com.

New Deal for Universities

With the launch of Move2008 Midland Valley is extending its support to teaching and research in structural geology.



This opens up the software for more flexible use in class teaching and for

Book your seat at our Silver Anniversary Technology meeting.

Our September Technology Meeting will be all about structural geology with sessions including working with sparse data; building and validating your model; to discrete fracture networks and reducing uncertainty.

Learn how applying structural cross-over technologies to some big holes in the ground and to frontier exploration is feeding back into improving tools and workflows for our oil and gas clients.

This is also a great chance to network with other structural geologists and fellow Move users. For further information contact:

Sarah, events@mve.com.



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The structural geology experts
www.mve.com

research projects. It also builds on the Field Mapping Support Initiative piloted by Midland Valley with a small number of universities this year.

For further details contact Sarah on move2008@mve.com.

Interpreters Tip: Measuring and Understanding Stratigraphic Thickness

Simple flattening of interpreted horizons is used as a method to check the validity of lower horizon picks during the interpretation process. However, this can give misleading results, and using an unfolding algorithm is a better approach particularly with steep dips. In the same way, automated picking using isochore thickness values may give inappropriate horizon picks.

There are different ways to measure the stratigraphic thickness of units depending upon the local deformation style. In extensional settings, due to the assumption of hangingwall collapse (Withjack & Peterson 1993), folded geometries are modelled as similar folds using vertical or inclined shear pins to measure the stratigraphic thickness of a unit (Figs 1A and 1B). In fold and thrust belts, folded geometries are modelled as parallel folds (flexural slip) using orthogonal thickness as the measure for stratigraphic thickness.

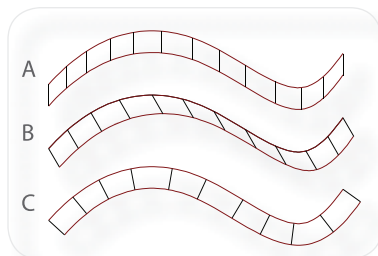


Figure 1 illustrates a variety of geometries found due to different local deformation styles. The top bed of each example is the same and the stratigraphic thickness is 200m, the lower bed has been generated using different modelling methods A. Vertical shear (similar folding) B. 60% Inclined shear (similar folding) C. Orthogonal thickness (parallel folding).

It is important to note that both the flattening and isochore methods are generally equivalent to the vertical shear method. Both techniques can give misleading results, particularly in areas of steep limbs.

For example, if you flatten in areas where the predominant deformation style is inclined shear or flexural slip then areas of high gradient change will appear either too thin (when dipping in the same orientation as the shear direction) or too thick (when dipping in the opposite orientation to the shear direction).

Move2008 components, 2D Move and 3D Move, have a variety of geometric tools that can be applied to extension, inversion, contraction, salt and strike-slip tectonic settings to help you to validate and construct geometrically constrained geological framework models.

Receive the tip monthly by email, contact help@mve.com.

Online Training Now Available

Do you need help or training on Move2008 at your desk? We can now deliver training in an online environment, live or with pre-recorded material. Contact Steven, training@mve.com.

Geoscientists helping geoscientists: Jan Heagy, Chuck Caughey and Martin Cassidy prepare a Publications Pipeline shipment to India.



Photo by Rick Wall

MAKING a difference This Pipeline Pumps Books and Science

By LOUISE S. DURHAM
EXPLORER Correspondent

AAPG's Publication Pipeline Committee (PPC), a group that seeks to share geologic knowledge, continues to get books and other information into the hands of university students around the world.

PPC volunteers, operating under a structure first organized years ago by Martin Cassidy, focus on supplying textbooks and other published material to help bolster geoscience education.

Call it a case of turning good intentions into valuable results.

And, call it necessary.

There are many regions in the world where university students may not have libraries, computers, online access and the like. While they may aspire to be geoscientists, they're hindered by a lack of access to information that students elsewhere take for granted – in fact, a basic textbook often can be a luxury.

The PPC members are doing their part to remedy this situation.

The assistance effort begins with the receipt of donated materials and continues until these materials reach the hands of students who may be halfway around the world. It's a somewhat daunting task, particularly for a group of volunteers.

The initial step is to inventory and sort all of the donated material.

"We do it by pallet," said PPC chairman Gerrit Wind, of Houston. "These boxes contain a series of memoirs, journals, books, and we make a list and put them on a pallet that has maybe two or three collections.

"If BULLETINS or memoirs are part of a pallet, we don't go through and isolate or take out geophysical or AAPG items or only recent editions of textbooks," he noted. "It's too labor intensive."

But it's not *all* work.

"Sometimes when sorting we tend to stop and read, which indicates the quality of the books," said PPC member Chuck Caughey, also of Houston. "There's a tendency to say 'Wow, I haven't seen this book in a long time.'"

Overcoming Difficulties

Once the sorting effort concludes, the real challenge begins.

"The hard part of making a donation is the logistical challenge," said Rick Wall, another Houston-based PPC member. "This is all volunteer, and we're sending these usually to the other side of the world – sending a shipment to, say, Afghanistan is a logistical nightmare."

Caughey acknowledged the difficulty.

"The real nightmare scenario would be to have a couple of pallets of books sitting on the dock in the rain while they're charging you storage on them because you're not

there, you don't know the import requirements, what the fees are," he said. "We have to make sure that's all in place before we send anything – it takes a lot of effort to make this work."

Having in-country help in place is a big plus.

"The books have to go through customs, be picked up and delivered," Wall noted, "and we couldn't do it without the help of AAPG members in-country. "We also depend on sister organizations as partners, such as the Nigeria Association of Petroleum Explorationists (NAPE) – we've made several donations to Nigeria, and NAPE was wonderful."

"In Papua New Guinea, we couldn't have done it without the help of the Petroleum Exploration Society of Australia," Wall added, "as well as AAPG members in the Asia Pacific region."

Wall noted they also rely on AAPG's Visiting Geoscientist Program as well as the student chapters at the receiving universities, which is a natural partnership.

Friends With Money

This is an expensive undertaking, and the not-for-profit committee depends heavily on sponsors for assistance – especially for the pricey shipping process.

"Our work would not be possible without the generous support of corporate partners like Anadarko, ChevronTexaco, ConocoPhillips, EnCana, ExxonMobil Upstream Research Company, Samson, Shell and even the U.S. Geological Survey," Wall noted.

In fact, the USGS was the principal underwriter for two shipments to Afghanistan.

The PPC is challenged to keep up the pace of shipments versus incoming publications, according to Wall. He noted they currently have many more books coming in than they're moving out.

You can help.

"We always need more corporate partners and committee members," Wall said.

He emphasized the critical need to:

- ✓ Identify universities that need books.
- ✓ Identify AAPG members close to these universities who can become involved.

To date, the PPC volunteers are responsible for shipping nearly 60 tons of material overseas.

"We're really proud of that," Wall said.

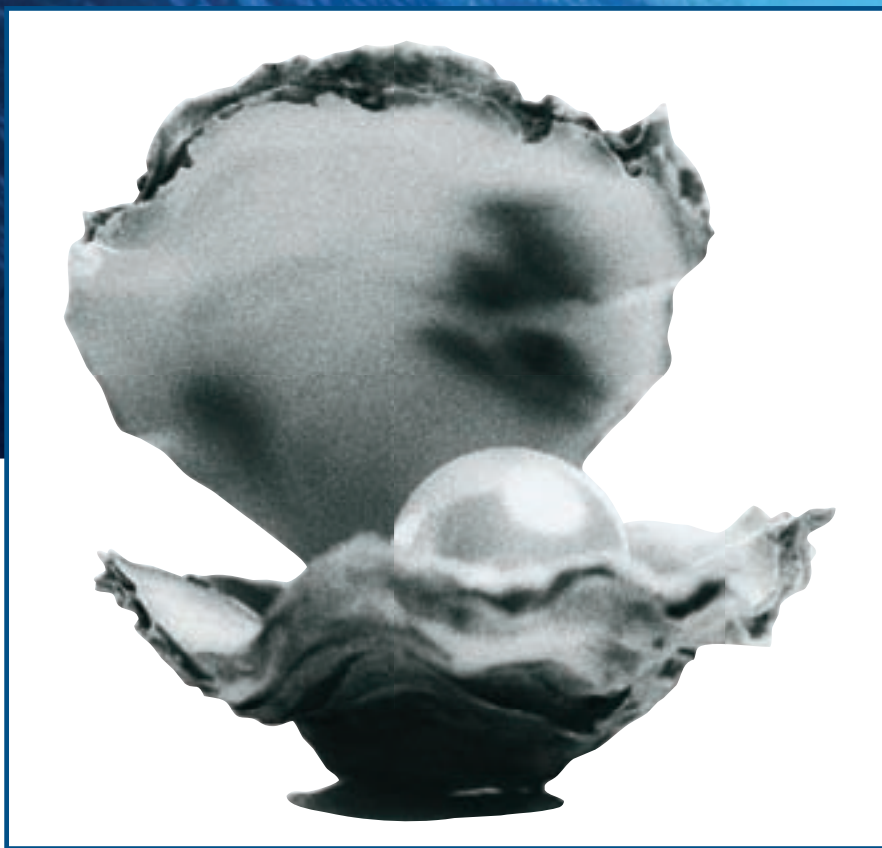
"But what we're really all about is the process of geoscientists helping geoscientists – that's our tagline, and we truly believe in it."

"It's not the amount of books, he said.

"It's the fact that we're sending books, that we can do this and make this happen."

"That's what all of us on the committee get our buzz from." □

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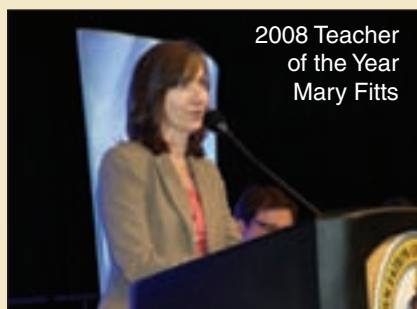
Teacher Nominations Open

The new school terms are about to begin, which means it's time for Sections and local societies to start thinking about nominations for the AAPG Foundation's annual Teacher of the Year award.

Each year the Foundation awards \$5,000 to honor "Excellence in the Teaching of Natural Resources in the Earth Sciences" by the top K-12 teacher.

The award comprises \$2,500 to the teacher's school – for the winning teacher's use – and \$2,500 for the teacher's personal use.

The winner will receive an expense-paid trip to the AAPG Annual Convention, where the award is



2008 Teacher of the Year
Mary Fitts

presented during the All-Convention Luncheon. This year's meeting is June 7-10 in Denver.

Foundation officials see the TOTY program as "an opportunity to offer something of significant appeal to

teachers in your area, to get some interaction going and to give local recognition to a teacher and to the teaching of Earth science."

Societies and Sections are "free to choose their nominees in whatever manner they wish," officials said, although final nominations to AAPG should use the form found online at <http://foundation.aapg.org/toty/index.cfm>

The deadline for submitting Section nominees to Tulsa is November 1.

For more information contact Laura Zahm, YEA Committee chair, at laura.c.zahm@conocophillips.com, or Angela Taylor in the Foundation office, at ataylor@AAPG.org. □



Abstracts Invited For Denver

*Call for Papers
Web Site Open*

It's never too soon to start planning for AAPG's next annual meeting – specifically, this is the month to begin.

A call for papers for the next AAPG Annual Convention and Exhibition has been issued, and the Web site to receive abstracts will open Aug. 4.

Next year's annual convention will be held June 7-10 in Denver, with the theme "Image the Past – Imagine the Future."

While several sessions will take advantage of the industry's current intensive emphasis on the Rocky Mountain region, many other sessions in Denver will be technical, more general and often international in scope.

Organizers are seeking papers for 15 general topics:

- ✓ Global Deepwater E&P (five possible specific sessions).
- ✓ Hydrocarbon Systems and Basin Analysis (seven sessions).
- ✓ Siliciclastic Systems (six sessions plus an SEPM research symposium).
- ✓ Carbonate Systems (nine systems).
- ✓ Structural Geology (11 sessions).
- ✓ Exploration and New Plays (eight sessions).
- ✓ Resource Development and Reservoir Characterization (seven sessions).
- ✓ Tight Gas (three sessions).
- ✓ Unconventional Reservoirs (seven sessions).
- ✓ Astrogeology (three sessions).
- ✓ Alternative and Renewable Energy (three sessions).
- ✓ Petroleum Geology and Public Policy (one session, "Peak Oil").
- ✓ Responsible Development, Sustainability, Climate Science (nine sessions, including a global climate change forum).
- ✓ Geologic Interpretation Case Histories of Geophysical Data (13 sessions).
- ✓ Student Sessions (two sessions – AAPG and SEPM).

The call for papers will end Nov. 4.

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

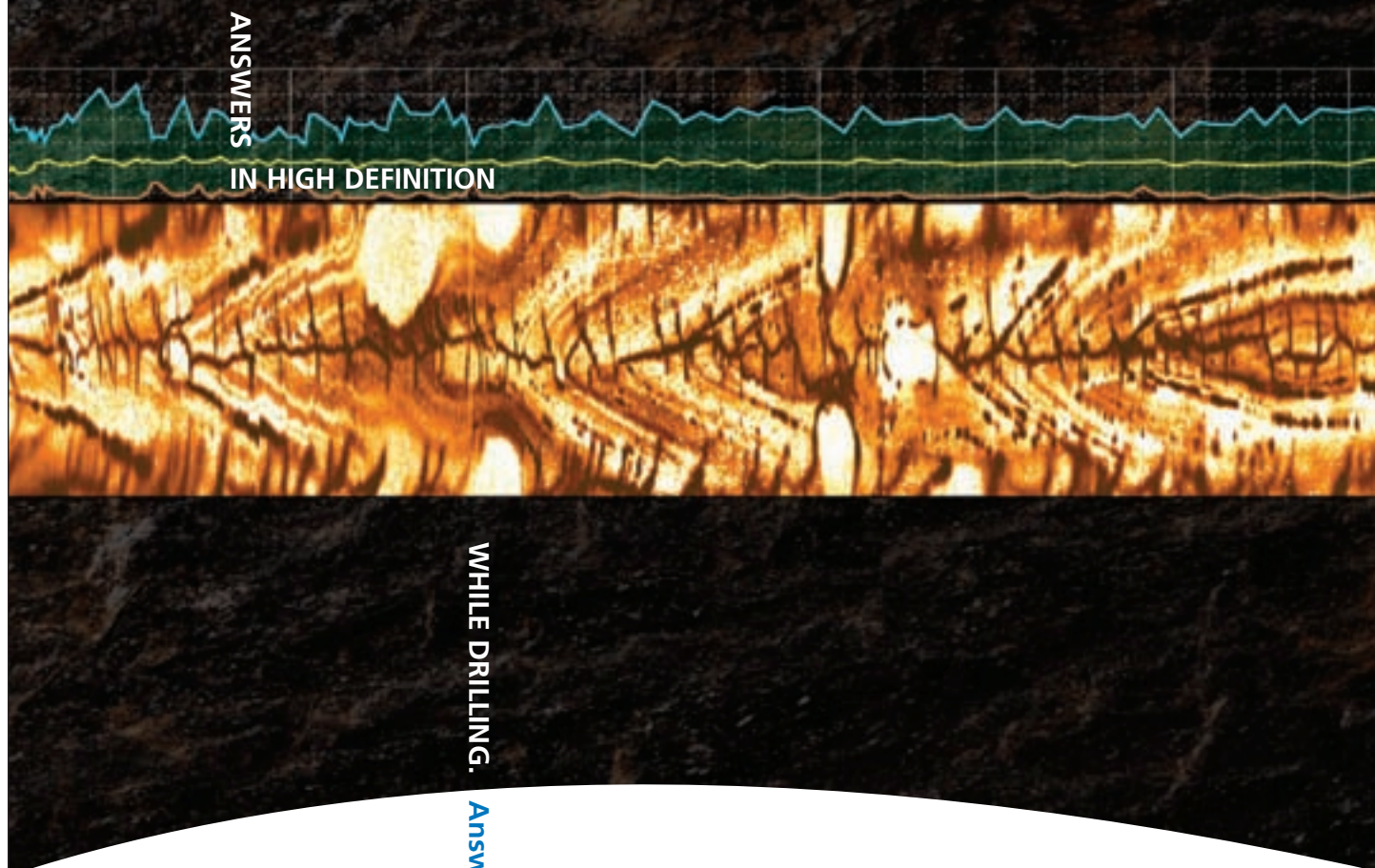
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FIELD SEMINARS

Lewis & Clark Geotour: Marias River To Gates Of The Mountains, Montana

September 9-14, 2008 / Begins and ends in Great Falls, MT

William B. Hansen, Jireh Consulting Services, Great Falls, MT

<http://www.aapg.org/education/fieldseminars/details.cfm?ID=19>



Applied Stratigraphy Of Paleozoic Carbonate Platforms

October 19-22, 2008 / Begins and ends in Las Vegas, NV

John E. Warne, Colorado School of Mines, Golden, CO

<http://www.aapg.org/education/fieldseminars/details.cfm?ID=70>



SHORT COURSES

Fall Education Conference On Structural Geology

September 15-19, 2008 / Houston, TX

Eight top-notch courses with 10 renowned instructors: John Lorenz, Ronald Nelson, Martin Traugott, Russell Davies, Vivek Chitale, Paul Elliott, Fred Hilterman, Mark Rowan, David Wiprut, and Steve Boyer

<http://www.aapg.org/education/fec.cfm>



Interpretation Of Old DST's For Bypassed Pay Potential

September 25-27, 2008 / Denver, CO, following the SPE Annual Meeting

Hugh W. Reid, Hugh W. Reid & Associates, Calgary, AB, Canada

<http://www.aapg.org/education/shortcourse/details.cfm?ID=111>



Intro To Petroleum Geology For Students

October 3, 2008 / Houston, TX, with the GSA Annual Meeting

Stephen Bend, University of Regina, Saskatchewan, Canada

<http://www.aapg.org/education/shortcourse/details.cfm?ID=13>

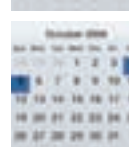


Intro To Petroleum Geology For Faculty

October 4-5, 2008 / Houston, TX, with the GSA Annual Meeting

Stephen Bend, University of Regina, Saskatchewan, Canada

<http://www.aapg.org/education/shortcourse/details.cfm?ID=169>



LAST CHANCE - DON'T MISS THESE SUMMER OPPORTUNITIES

Fractures, Folds And Faults In Thrusted Terrains

August 18-22, 2008 / Begins and ends in Great Falls, MT

William Hansen, Jireh Consulting Services, Great Falls, MT; Steve Boyer, Consultant, Tacoma, WA; Charles Kluth, Consultant, Denver, CO; Jim Sears, University of Montana, Missoula, MT

<http://www.aapg.org/education/fieldseminars/details.cfm?ID=15>



Basic Petroleum Geology For The Non-Geologist

August 26-28, 2008 / Houston, TX

Norman Hyne, University of Tulsa, Tulsa, OK

<http://www.aapg.org/education/shortcourse/details.cfm?ID=69>



More Science Than You Can Shake A Pick At.



American Association of Petroleum Geologists

REGIONS&sections

Retention of 'GeoWomen' a Concern

(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

Leading industry employers tell AAPG that although they recruit and hire the best geoscientists – and often at least half are women – they have problems retaining women geoscientists.

At the end of June AAPG had 4,317 women members worldwide (all membership classes), or 14 percent of the total AAPG membership of 30,186.

The mission of AAPG's Professional Women in Earth Sciences Committee is to increase participation and advancement of women in Earth Science and industry, with emphasis on retention, education, outreach, support and leadership development. It fulfills its mission through interaction with women in geosciences, their employers, educational institutions and professional societies.

Among the committee's priority goals for 2008-09 is to gather data and identify issues impacting the retention of women geoscientists in the energy industry work force. The desired outcome of this survey is to inform AAPG's role and future actions toward improving the



workplace climate for women geoscientists.

While the percentage of women AAPG members has increased gradually from 8 percent in 1991 to 14 percent in 2008, the percentage of master's degrees in earth sciences awarded to women by U.S. educational institutions has increased 66 percent over the 10-year period from 1996 to 2005.*

Despite the large percentage of women in graduating classes, along with industry recruiting efforts, women

geoscientists are walking out the door:

- ✓ Some earn geosciences degrees and never enter the industry.
- ✓ Some start careers, then leave the industry and never come back.
- ✓ Some leave for a time and then resume their industry careers.
- ✓ Some stayed in the industry for a long time, but then saw the need for numerous workplace improvements to better support families.

Family-Friendly Employers

Examples of industry employers who

seem to "get it" do exist.

In fact, beginning here and in future EXPLORER issues, we will periodically feature companies whose employment policies and workplace environment can be described as "family friendly," supporting not only women geoscientists, but also their partners in dual-career households.

BP Exploration is one such family-friendly employer. The company offers great support for working parents: daycare facilities, nursing rooms, flexibility in working hours and a "working parents network."

"The benefits in support of our family have been amazing," said Cindy Yeilding, BP exploration manager and a previous AAPG Distinguished Lecturer.

"My husband actually came to BP after many years with another company because of the on-site daycare facility at BP," she said. "It was a significant factor in a major career move for him."

Target Audience for Survey

AAPG's work force retention survey targets degreed women geoscientists of all ages and at every stage of their careers.

Specifically, the survey aims to reach four groups:

- ✓ Former employees who left the industry.
- ✓ Industry employees who left, then returned after a time.

continued on next page

AAPG - SEG
Student Expo

Fall 11th Annual AAPG/SEG Student Expo

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UPCOMING REGIONAL WORKSHOPS

9/4 **Midcontinent:** Well Completions and Stimulation - Wichita, KS.

9/17-19 **Rocky Mountain Paradox Basin Field Trip (RMAG)** - Southeast Utah.

9/18 **Midcontinent:** Using GPS in the Oilpatch (Eastern Kansas Oil & Gas Association) - Chanute, KS.

9/22-23 **Rocky Mountain Symposium:** Rocky Mountain "Dusters" Lessons Learned and Opportunities Created - 9/23 **Rocky Mountain Short Course:** Risk Management (RMAG) - Denver, CO.

9/TBD **Central/Eastern Gulf:** Petroleum Systems and Exploration, North Louisiana Salt Basin (Shreveport Geological Society) - Shreveport, LA.

9/TBD **Eastern:** Inhouse core workshop @ WMU - Kalamazoo, MI.

9/TBD **Midcontinent Series of Pumper workshops** - multiple locations, TBD.

9/TBD **West Coast:** Artificial Lift Systems (Harbison Fischer/Lufkin) - Long Beach/Bakersfield, CA.

For further information, view PTTC's online calendar at www.pttc.org/national_calendar.htm

Reduced Registration Price Deadline Looms

An important deadline is coming fast for those who will be attending this year's AAPG International Conference and Exhibition (ICE) in Cape Town, South Africa.

Register online by the Aug. 12 early deadline and you'll save up to \$255 off the regular registration fee.

Register early and you'll also beat the rush for flights and accommodations for the meeting.

The conference will be held Oct. 26-29 at the Cape Town International Convention Centre, designed around the theme "African Energy, Global Impact."

The official announcement was mailed during July, and a PDF is available online at www.aapg.org/capetown.

Online you can find information about the entire technical program – including short courses, field trips, geological and social trips/tours and 70-plus sessions built around "the big five" symbols of Africa's animal kingdom – topics that cover the latest in science, technology and activity from around the world.

Those themes are:

- ✓ The Elephant – A Steady Advance: "Deepwater: Ancient Analogues, Current Technologies, Future Opportunities."
- ✓ The Leopard – Unraveling Secrets: "Advances in Geoscience and Allied Disciplines."
- ✓ The Black Rhino – Turned Around



Cape Town, site of this year's ICE.

From Near Extinction: "Next Generation Tools and Technologies."

- ✓ The Lion King – Roar of the Future: "The New Business of Energy."
- ✓ Cape Buffalo – Beauty and the Beast: "Gondwanan and Pangean Petroleum Systems: Exploration, Development and Production – Emerging Plays, Lessons and Analogs."

In addition, the Cape Town program offers:

- ✓ A plenary session dealing with African energy.
 - ✓ Four special forums, dealing with the geoscience work force of the future; the Lusi mud volcano; global climate change (from an African perspective); and the role of small and independent companies in Africa's 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, director of the Bernard Price Institute for Palaeontological Research at the University of Witwatersrand.
 - ✓ The AAPG Distinguished Lecturer Luncheon, featuring Lynn N. Hughes, a judge with the U.S. District Court in Houston and this year's AAPG distinguished lecturer of ethics, speaking on "Dilemmas in Trust."
- Complete information – and links to early registration – can be found online at www.aapg.org/capetown/. □

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continued from previous page

✓ Women geoscientists currently employed in the industry, academia or government, but with opinions on improving the workplace climate for women and families.

✓ Women with a geosciences degree who were never employed in the industry.

The survey also will capture current workplace "best practices" that are supportive of working women and contribute to employee satisfaction.

Survey Invitation

All AAPG Active and Affiliate members will receive an e-mail invitation from AAPG to participate in the survey. The e-mail will contain survey instructions and a Web link to the survey form.

The survey also will be found on the AAPG Web site at www.aapg.org.

To ensure a broad work force sampling, all AAPG members are requested to forward the survey invitation e-mail to co-workers, spouses, daughters, women friends and university alumni with geosciences degrees.

The survey will remain open through Sept. 30, and results will be published in a future EXPLORER and on the AAPG Web site. □



*Source: National Science Foundation, Division of Science Resources Statistics, special tabulations of U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Completions Survey, 1996-2005.

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Careers with energy
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WWWupdate

Search Tools a 'GPS' for Web Site

By JANET BRISTER
Web Site Editor

I read an analogy recently between a Web site and a building – a great illustration on just what a Web site's function is and how a good one is organized.

Imagine a huge department store with multiple floors. You get off the elevator on a specific floor to find what you seek.

But sometimes you get off on the wrong floor. Or you turn down the wrong aisle. Or maybe you just pass on by your target without noticing it right under your nose.

And at that point your visit to the store becomes annoying. And then frustrating. And, too often, maddening.

Been there? Yep, done that.

The same concept applies to Web sites: You arrive seeking specific information, and because of the sheer enormity of the site, you can't quite find what you're looking for.

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and "I can't find it!" is one phrase we want to eliminate.

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Starting mid-July we added a page with the BULLETIN's table of contents.

This page serves two purposes:

✓ Upon clicking a BULLETIN link it quickly confirms you are looking at the Bulletin. Previously it went to the Members Only login page where the BULLETIN link is visible but not obvious. This seemed misleading.

✓ By placing the table of contents on the public side of the Members Only login

the Google search tool will find the short abstracts about the articles – and lead more non-members to the publication, which may entice them to subscribe to the BULLETIN, or better yet, join AAPG!

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Political climate change: Public warming to exploration

Polls Chart Shift in Energy Attitudes

By LARRY NATION

AAPG Communications Director

Higher energy costs hitting the pocketbooks of American consumers are creating a tectonic shift in attitudes about exploration.

Recent surveys and media reports are confirming the change of heart.

A sampling of thoughts on U.S. offshore exploration:

✓ Reuters/Zogby poll, June 18: 60 percent favor, 40 percent oppose.

✓ Gallup Poll, June 19: 57 percent favor, 41 percent oppose. The same poll showed only 20 percent thought 'Big Oil' is the major problem.

✓ Rasmussen Reports, June 26: 59 percent favor drilling offshore the United States. The same poll showed Florida voters favoring offshore drilling 59-32 percent.

✓ Pew Research Center, July 2: 57 percent favor, 41 percent oppose.

✓ The pollsters cited a change from previous results, with Pew noting that the results favored offshore drilling for the first time this decade. A poll just last February was 35-55 percent against.

"The public's changing energy priorities are most evident in the growing percentage that views increased energy exploration – including mining and drilling, as well as the construction of new power plants – as a more important priority for energy policy than increased conservation and regulation," Rasmussen reported.

"Nearly half (47 percent) now rates energy exploration as the more important priority, up from 35 percent in February," the report added.

The *New York Times* reported that when Washington, D.C., lawmakers returned from their 4th of July holiday, some attitudes were changed "after spending a week in their states and districts with angry and frightened consumers."

One of the telling quotes in the *Times* report that indicates the sweeping nature of the attitudes was one from the Democrat senator of North Dakota, who stated, "This (energy policy) is the number one issue on people's minds, very clearly." North Dakota is not necessarily the first state that comes to mind when it comes to caring much about energy policy.

Nearly half now rates energy exploration as the more important priority ...

Then there's this from the *Wall Street Journal*: "I'm open to drilling and responsible production," said Senate Majority Whip Richard Durbin (D-Ill.), adding that Senate Majority Leader Harry Reid (D-Nev.) could also support the move.

And, from the *Los Angeles Times*, "For years I have argued that we should avoid offshore drilling and tapping into underground reserves in ANWR until there was an emergency that left us with no choice," Rep. James T. Walsh (R-N.Y.), a longtime backer of the drilling ban, said

recently. "That time has come."

The *L.A. Times* also wrote Sen. Mel Martinez (R-Fla.) said he saw "a shifting political climate."

"I think it's changed. And I think \$4 a gallon has done that," he said. "This is compelling. I hear that from people everywhere I go."

Martinez said in the new climate, the nation needed resources.

"It's about how can we supply enough product so that there is more supply available to meet the ever-increasing demand," Martinez said. "And offshore may be a part of that equation." □



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Geotimes Name To be Changed

Geotimes magazine, the flagship publication of the American Geological Institute for 52 years, will become *EARTH* magazine beginning with the September issue.

Christopher Keane, AGI technology and communications director, said the magazine "is fundamentally staying the same editorially – we are expanding the page count (to 80 pages) and bumping up the visual appeal."

In 1999, AGI and another group acquired the trademark and other rights to *EARTH* magazine, which ceased publication in August 1998. Keane said AGI is exercising its rights at this time.

AGI said the plans include expanding the distribution of *EARTH* to newsstands and bookstores across the United States and Canada. □

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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.

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Stevens, Stanley S., Sedna Energy, Fort Smith (C.R. Sampson, C. Faulkner, J. Woolsey)

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Spencer, Samuel C., Pason Systems USA, Colorado Springs (D. Allin, W. Nagle, H. Schmidt Jr.)

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Damico, James R., Illinois State Geological Survey, Champaign (J. Grube, B.G. Huff, R.J. Finley)

Louisiana

Simms, Michael Arthur, URS Corporation, Baton Rouge (D.E. Wyatt Jr., C.J. Minero, W. Beal)

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Burger, Robert M. P.G., TechLaw, Allison Park (J.A. Harper, M.A. Gross, R.M. Follador)

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Akingbade, Atinuke Olubunmi, Noble Energy, Houston (C. Balistrere, D. Haymond, D. Steward); Choudhary, Manoj Kumar, Hess Corp., Houston (S.K. Muhuri, D.L. Hansen, S.B. Marler); Cooper, John E., Forrest A. Garb & Associates, Dallas (G.K. Ebanks, J.B. Jay, S. Pittman); Geary, James Reinhold, Anadarko, Houston (T. Munson, S. Ruhl, B. Johnson); Gilmore, Jerry, Crimson Exploration, Houston (K. Small, R. Riepe, K.S. Dropek); Harrell, Janet Claire, Shell E&P, Houston (J.L. Shepard, R. Schneidmann, A. Bray); Janos, Louis III, Subsurface Consultants & Associates, Houston (reinstate); Jonk, Rene, ExxonMobil Upstream Research, Houston (A. Hurst, Q. Passey, K. Bohacs); Liu, Xiaoli, ExxonMobil, Pearland (R. Jonk, R.J. Kleist, R.J. Pottorf); Luhurbudi, Eddy, Murphy Exploration & Production, Houston (D.A. Pratt, G.W. Coburn, L.A. Czerniakowski); McDonald, David C., Hunt Oil, Addison (B. Boutte, K. Bailey, T. Cwikla); Oko, Albert Sunday, Chevron USA, Houston (T.J. Neely, R.C. Bain, L. Tedesco); Scott, Samuel Z., Occidental Petroleum, Houston (C. Kerans, J. Bellian, C. Kemp); Solum, John Gregory, Shell International E&P, Houston (B. Prather, T.N. Diggs, M. Mora-Glukstad); Sun, Yue Feng, Texas A&M University, College Station (W. Ahr, A.H. Bouma, W. Ayers); Tillotson, Barbara A.,

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Milner, Mary K., TerraTek/Schlumberger, Salt Lake City (S.R. Bereskin, S.J. Lutz, R.H. McLin)

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Jones, Karen Lee, Scavenger Exploration, Arlington (W. Dobie, A. Anderson, R.K. Jones)

Wyoming

Olson, Remelle E.B., REBO Geologic Services, Parkman (G.E. Weber, A.D. Todd, M.L. Trout)

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Chernicoff, Carlos Jorge, CONICET, Buenos Aires (V. Ramos, T. Zapata, J.O.S. Santos)

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Poynter, Sarah Elizabeth, Eni Australia, Perth (A. Bond, J. Gorter, D. Wheller); Tingay, Mark Robert Paul, School of Earth and Environmental Sciences, Adelaide, SA (R. Hillis, C. Morley, R. Swarbrick); Wood, Stephen James, Oil Search Limited, Sydney (G.M. Bradley, R. Heidorn, K.C. Hill)

Canada

Cowley, Byron, West Energy, Calgary (G.R. Bloy, N. Bruder, B. Borowski)

Colombia

Combata Q., Jorge Fabricio, Cepcolsa, Bogota (G. Bayona, I.D. Olaya-Lopez, R. Arango); De Armas Pedraza, Jose Miguel, Nexen Petroleum Colombia, Bogota (I.C. Thomson, D.J.W. Mitchell, E. Kairuz)

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Foldessy, Janos, University of Miskolc, Miskolc (I. Berczi, M. Dvorakova, G. Tari)

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Hareendran, Arvind, ONGC, Mumbai (A.M. Chitrao, R.K. Upadhyay, U.P. Singh); Kumar, Baleshwar, National Geophysical Research Institute, Hyderabad (V.P. Dimri, H.K. Gupta, N. Pendkar)

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Thuo, Peter Kinyua, National Oil Corporation of Kenya, Nairobi (E.A. Kilembe, P. Nicholls, D. Jarvie)

Certification

The following are candidates for certification by the Division of Professional Affairs.

Petroleum Geologist**Kentucky**

Wood, Mark Franklin, Jefferson Community College, Louisville (reinstate)

New Mexico

Lorenz, John Clay, consultant, Edgewood (P.J.F. Gratton, G.W. Hobbs, L.K. Lischer)

Oklahoma

Reeves, Thomas Kenneth Jr., the University of Tulsa, Bartlesville (reinstate)

United Kingdom

Stone, Christopher, international exploration consultant, Portsmouth, England (reinstate)

WEST TEXAS GEOLOGICAL SOCIETY 2008 FALL SYMPOSIUM September 10-12, 2008

"The Permian Basin: Geologic Models to the World"

Please plan to attend the 20th West Texas Geological Society Fall Symposium during the second week of September. The two days of technical sessions will feature oral and poster sessions presented by outstanding authors showcasing current research, field studies and other aspects of the Permian Basin and analogous areas. The symposium provides attendees with a chance to network with their peers in a technical setting that also provides opportunities for social interaction.

A sample of topics being presented:

- Carbonate Cements in the Cherry Canyon, Culberson and Reeves Counties, Texas
- Lithofacies and Depositional Environment of the Barnett Shale in the Delaware Basin
- Analysis of the Basal Abo/Wolfcamp Horizontal Resource Play in SE New Mexico
- Yates Gas as an Unconventional Resource Play
- Two Great Megashells, Texas and Oklahoma
- Cheeseburger Field, Eastern Shelf; A Case for Integration of Technologies
- Exploitation of the Wolfberry
- Integration of Log, DH Testing and Core Data to Optimize Gas Shale Stimulation
- Evolution and Reservoir Significance of a Sequence Stratigraphic Model
- Maximizing Coring Operation Efforts for Shale Gas Exploration
- Using 3D Seismic Waves and the Time-Frequency Uncertainty Principle to Find Oil
- Formation of High Helium Gases: A Guide for Explorationists
- Integrated Approach to Site Characterization/Remediation of Contamination in the Oilfield
- Application of Borehole Imaging to Evaluate Porosity/Permeability in Carbonate Reservoirs

The Fall Symposium will be held at the Midland Center in downtown Midland, Texas, with technical sessions and poster sessions taking place on **September 10-12, 2008**. The symposium will begin at 8:30 am on Wednesday, September 10 with registration beginning at 7:30 a.m. For more information, contact Executive Director Paula Mitchell at the WTGS office at (432) 683-1573, [wtgs@wtgs.com] or General Chairman Rick Doehe [rdoehne@utsystem.edu] (432) 686-4716. For information on technical sessions, contact Daphne Lampman at [dlampman@claytonwilliams.com] (432) 688-3295 or Bob Trentham at [trentham_r@utpb.edu] (432) 552-2432. An Ethics Luncheon Presentation will take place on Wednesday at the Midland Petroleum Club. The presentation will be given by Judge Lynn N. Hughes, United States District Judge, Houston, Texas. This presentation meets the Texas Registration requirement for Professional Development Hours for Geologists and Engineers.

To register, please send the completed form below with payment to: WTGS P.O. Box 1595, Midland, Texas 79702. Credit card payment may be faxed to (432) 686-7827. **Pre-registration and cancellation deadline is August 26, 2008**. A block of rooms has been reserved at the Midland Hilton. The hotel phone number is (432) 683-6131. Remember to ask for the special WTGS symposium rate.

____ Symposium Pre-Registration \$125.00 ____ Symposium on Site Registration \$150.00
 ____ Ethics Luncheon Presentation* \$25.00

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I cannot attend but wish to order ____ copy/copies of the symposium CD. The cost is \$30.00 per set plus \$7.40 tax, shipping and handling. This price is good until September 10, 2008.

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* Attendance is limited to 250 with symposium registrants given first priority. Remaining slots will be filled on a "first come, first served" basis.

The WTGS Annual Golf Tournament will begin at 1:00 pm on Friday, September 12 following the close of the Fall Symposium. Please call for more information or visit the WTGS website.

Inmemory

Geologist Roy Huffington, 90, Dies

Roy M. Huffington, an AAPG Foundation Trustee Associate who played a major role in developing Indonesia's oil and natural gas sector and later served as a U.S. ambassador to Austria, died July 11 while traveling abroad from his home in Houston. He was 90.

A member of AAPG since 1947, he held a bachelor's degree in geology from Southern Methodist University and a master's and doctorate in geology from Harvard University.

Huffington served in the U.S. Navy during World War II, and upon his return became a field geologist for Humble Oil Co. He later established his own gas and oil firm, Huffco.

He worked in Texas and Louisiana until 1968 when he struck a groundbreaking production-sharing contract with the government of Indonesia.



Huffington

Discoveries in East Kalimantan led to the development of a multi-billion dollar LNG export project between Indonesia and Japan, which became a major source of revenue for the country.

Huffington sold his company after President George H.W. Bush appointed him as U.S. ambassador to Austria, where he served from 1990 to 1993.

The AAPG Foundation's Roy M. Huffington Fund underwrites an AAPG Distinguished Lecturer international tour and was established by his daughter Terry Huffington, an AAPG member, in honor of her father.

He received the Michel T. Halbouty Memorial Human Needs Award in 1991.

* * *

Peter E. Gretener, 81
Calgary, Canada, May 16, 2008

Norman W. Jeffries, 78
Stillwater, Okla., May 3, 2008

Philip E. LaMoreaux, 88
Tuscaloosa, Ala., June 23, 2008

Roy M. Huffington, 90
Houston, July 11, 2008

Gordon J. Moir, 63
Newlands, South Africa
March 8, 2008

Eugene A. O'Brien, 79
Denver, May 29, 2008

John F. Rollins, 83
Arrowsic, Maine, March 18, 2008 □

(Editor's note: "In Memory" listings are based on information received from the AAPG membership department.)

continued from previous page

Mexico

Hernandez, Lilia Salazar, Pemex Exploracion, Villahermosa (F. Audemard, J. Patino, P.J.I. Juarez); **Valencia, Montserrat**, Pemex, Poza Rica (J. Armentrout, A. Guzman, U. Romano)

Nigeria

Awa, Chidi Uka, Pioneer-Alfa Petroleum Services, Portharcourt (A. Avwunudiogba, O.A. Aworanti, I.T. Preye)

People's Republic of China

Li, Meijun, China Petroleum University, Beijing (F. Wang, S. Li, Z. Liu)

Poland

Krzywiec, Piotr, Polish Geological Institute, Warsaw (J. Golonka, F. Roure, J. Armentrout)

Portugal

Pimentel, Nuno, University of Lisbon, Lisbon (H. Matias, R. Pereira, F. Santos)

Qatar

Al-Mannai, Ahmed Sultan, WestPay, Doha (S.C. Wilmot, D.D. Puls, K. Potma)

Saudi Arabia

Khan, Umer, Saudi Aramco, Dhahran (M.O. Al-Amoudi, S.A. Al-Hawny, J.A. Al-Hajhog)

Scotland

Drummond, Michael Edgar, Fronterra Integrated Geosciences, Aberdeen (D. Barr, C. Feazel, J. Kier); **Roche, Rosamond Mary**, Tracs International, Aberdeen (reinstate) □



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Commentary

Energy Myths and Realities

Because of who you are and what you do, no doubt you’ve been asked about oil prices and the current energy situation. And no doubt, the conversations will continue. Interestingly, recent Gallup polls show 57 percent of Americans want increased domestic drilling and only 20 percent believe ‘big oil’ is the major problem. That is quite a turnaround from years past (see related story, page 63). But there are a lot of questions still to be answered – and

erroneous conclusions abound. AAPG President Scott Tinker has been answering a lot of these questions in his position as director of Bureau of Economic Geology at the University of Texas at Austin, and has been giving talks and writing op-ed pieces on “Energy Myths and Realities.” The following is a “Top 10 List” of the myths and realities he has presented as talking points as the conversations come up. Some “myths” and the “realities” are offered below.

Myth	Reality
1. The United States can be energy independent in the next 25 years.	<ul style="list-style-type: none">• The world is “flattening;” commodity interdependence is becoming the norm.• Energy infrastructure transitions take time and are very expensive (\$ trillions).• The United States imports over 30 percent of its energy, mostly as oil, and the trend is increasing.• Independence requires realistic, scalable alternatives, which do not currently exist but can be developed over several decades.
2. “Renewable energy” can reduce dependence on fossil fuels significantly in the next 25 years.	<ul style="list-style-type: none">• Energy is not renewable –some sources of motion (wind & water), light (solar) and fuel (crops) seem “continuous” on human time scales.• Intermittent sources (solar, wind) are cleaner, less reliable, more expensive, and represent less than 1percent of the energy mix.• Base load fuels (coal, natural gas, nuclear) are dirtier, more reliable, and cheaper.• Decarbonization of the energy mix has been happening for over 150 years, but increased demand for coal in China and elsewhere is beginning to change that.• The consumer bases his/her energy choice largely on price; alternatives need to be affordable.
3. The economy will adapt easily to a rapid, federally imposed energy transition.	<ul style="list-style-type: none">• Concerns about climate have placed the public sights squarely on combustion of fossil energy.• Economies are inextricably linked to energy; affordability and availability of energy are key to a healthy economy.• A healthy environment requires a healthy economy.
4. Energy efficiency and savings alone will solve the problem.	<ul style="list-style-type: none">• Efficiency and energy savings are vital parts of the solution, but we cannot “save” our way out of a crisis.• Improved efficiency often increases demand for number of “units” (cars, refrigerators, microwaves, and computers).• Global industrialization, population growth, and modernization are increasing energy demand.
5. There is abundant low-cost, conventional oil remaining to be discovered.	<ul style="list-style-type: none">• Much of the easy to produce (hard to find) conventional oil has been discovered and will plateau and then decline in production; i.e. conventional oil “peak” in the coming decades.• Much of the easy to find (hard to produce) unconventional oil will be developed in the next hundred years.• Biofuels require a tremendous amount of energy, water and soil.• Coal to liquids, gas to liquids, heavy oil and shale oil also require energy and water to produce.
6. “Big Oil” controls the price of oil and gasoline and makes obscene profits.	<ul style="list-style-type: none">• Big Oil companies control less than 10 percent of global reserves. i.e., limited access to their primary product, and thus don’t control price.• Supply and demand are the major drivers of oil price, but price is also related to the value of the dollar, speculation, weather, government policy, and supply disruptions, among other things.• Lack of access is pushing Big Oil towards “unconventional” oil and natural gas.• Unconventional oil and natural gas are more expensive to develop (today).• Oil industry profits are volatile; it is an expensive and risky business.
7. Cutting oil imports will stabilize and lower gasoline prices.	<ul style="list-style-type: none">• Oil is a fungible commodity; global demand is increasing and the price of oil is likely to remain high, but volatile.• Cutting U.S. oil imports will reduce U.S. supplies and drive gasoline price up.• Increased (carefully considered) access to U.S. resources would help reduce oil import demand as we transition to other fuels; it takes up to a decade to bring new production online.• Nationalization is popular in certain countries, but a poor idea overall. Global trade and access are vital for a healthy global economy.
8. Global production of oil and natural gas are peaking and we are running out of fossil energy.	<ul style="list-style-type: none">• Fossil fuel resources (oil, natural gas and coal) can provide over 200 years at current consumption rates. Issues: emissions and long-term resource life.• Uranium and nuclear energy potential are vast. Issues: waste disposal and accident impact.• Dams, hydrothermal, wind, biomass, tides, and other emerging forms provide long-term regional supplements. Issues: cost, technology, and environment.• Solar energy is vast and electricity storage and transmission technologies should be pursued aggressively. Issues: technology and infrastructure.
9. All coal is dirty.	<ul style="list-style-type: none">• Coal reserves are substantial.• Coal can be made reasonably clean with carbon sequestration• The power will cost more; a lot more initially.• There is a choice: store CO₂ in the atmosphere (today) or sequester it in subsurface brine reservoirs.
10. The cost of energy is increasing.	<ul style="list-style-type: none">• The cost of electricity in the U.S. has been decreasing in real dollars; Clean power will cost more.• The cost of liquid fuels has decreased overall, until recently. Security of liquid supplies will cost more.• U.S. Energy use per GDP (energy intensity) continues to decline. Per capita use is relatively flat. ❏



There's still time to sign up for the next excursion of AAPG's popular Lewis & Clark Geotour: "Marias River to Gates of the Mountains, Montana," which takes place Sept. 9-14. Details at www.aapg.org.

Photo by Denise Stone

EDUCATIONupdate

Registration is now available for AAPG's Fall Education Conference, built on the theme "Structural Geology," set Sept. 15-19 in Houston.

Sign up before Aug. 18 and you'll save \$100 on registration fees (which also includes lunch each day).

The fall conference is intended to provide five days of geoscience training at one location, offering three concurrent sessions each day that you can mix-and-match as needed.

Five-day badges can be transferred to another person if you're unable to attend all days.

This year's course schedule includes:

✓ Fractured Reservoirs: Observation to Evaluation and Simulation (taught by

John Lorenz and Ron Nelson).

✓ Reservoir Characteristics from Dipmeters and Borehole Image Logs (Vivek Chitale and Paul Elliott).

✓ Pore Pressure Prediction in Practice (Martin Traugott).

✓ Regional Stress and Reservoir Geomechanics (David Wiprut).

✓ Seismic Amplitude Interpretation in Structural Analysis (Fred Hilterman).

✓ Concepts and Methods in Fault Seal Analysis (Russell Davies).

✓ Four-D Evolution of Thrust Systems (Steve Boyer).

✓ Practical Salt Tectonics (Mark Rowan).

For more information or to register go to www.aapg.org/education/fec.cfm. □

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READER'Sforum

Something More Needed

The three key points about the energy future in your story on coal vs. natural gas as a fuel for the future (July EXPLORER) are quite a bit off-mark.

In fact all three points combined (conservation, efficiency and alternate fuels) won't make much difference in the current energy pricing or future supply security. The story missed the two most important points altogether that are being vigorously debated around the globe and by the U.S. public and government (and not just in our AAPG community, such as the recent private presentation to the U.S. senators by AAPG President Scott Tinker).

✓ Conservation – This never could bring enough supplies, since it brings production cuts by producers. Historical data never supports this theory.

✓ Efficiency – There is a limit that can be reached by modern industrial setups.

✓ Alternate fuel – Practically feasible, but this won't cut much into required level of energy use globally within the foreseeable future.

The two most important points to address the current question of affordable "fossil energy" by U.S. consumers, along with supply security, are:

✓ Immediate expansion of U.S. production capability, through unlocking more reserves from proven and productive reservoirs by new recovery technologies.

✓ Near-future supply security from quick growth of U.S. "proven reserves" through new and serious exploration efforts, either by going deeper in proven productive basins or under-explored older basins in the United States with the active assistance of the U.S. Congress, which could open many restricted areas off the two coasts as well as federal lands like ANWR and oil shales.

Lets also keep in mind that it's not in the best interest of non-U.S. producers

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.

(certainly not the smart ones) to keep the commodity (oil) price so high to face natural conservation or sudden and dangerous slowdown of major economies like the United States, Japan, the European Union and the growing, robust economies of India, China and Russia etc.

As far as we know the world's oil production has been going up for years; its demand has been rising faster.

Oh ... I hope some U.S. politicians or "Save-the-Earth" folks don't ask for UN intervention!

S.K. Bhattacharjee (Kumar)
Houston

India's Potential, Too

Regarding your stories on U.S. shale gas activity (July EXPLORER): Shale gas reservoirs hold immense potential in India, also.

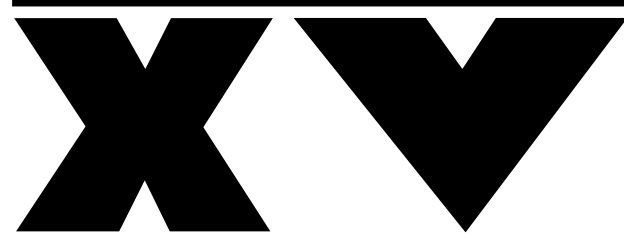
Some of the wells tested in the Cambay Shale gave oil and associated gas production. However, separate wells have so far not been completed as gas producer in Cambay Shale reservoir.

Therefore, based on the analogy of U.S. basin shale gas plays, exploration need to be done for shale reservoirs in Cambay, Cauvery and Assam basins in India while applying U.S. technology of well drilling and completion.

Devdutt Sharma
Ahmedabad, India

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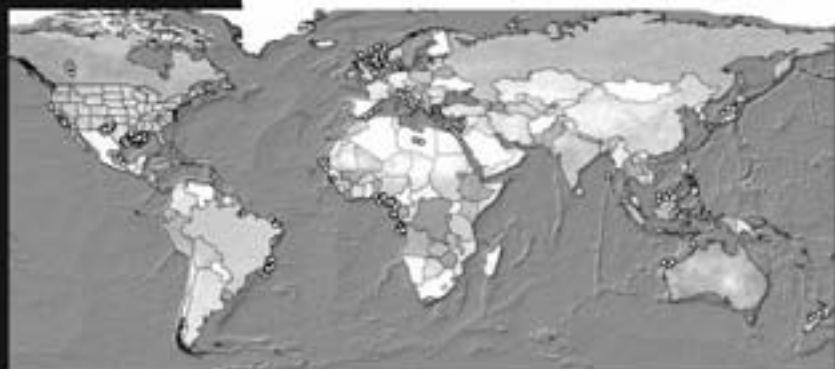
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Some See a Vista; He Saw An Analogy

Spanish Outcrops = Mexican Prize

AAPG member Claudio Bartolini, a senior geologist with Repsol YPF in Houston, was visiting northern Spain in June when he visited San Juan de Gaztelugatxe islet, a tiny island on the coast of Biscay belonging to the municipality of Bermeo, in Spain's Basque Country.

The outcrops quickly caught his eye – and not just because it was a scenic vista.

Geologically, the island is made up of Albian limestones from the so-called Urgonian Complex, a biosedimentary system formed along the Paleotethys realm. At this location, this unit represents a carbonate platform margin dissected by synsedimentary faults associated with the opening of the Bay of Biscay in the Middle Cretaceous.

What Bartolini recognized were outcrops mapped and studied by his colleague, Jose C. Vicente Bravo, director of new business development with Repsol YPF in Madrid, Spain, as part of his dissertation research.

Vicente Bravo saw that these Urgonian facies assemblages and their associated paleogeographic setting are analogous to the petroleum-prolific El Abra and Tamabra formations (age-equivalent units) that characterize the Golden Lane and Poza Rica districts, Tampico-Misantla Basin, Mexico.

Who knew a vacation excursion could provide such a valuable setting?

According to the study, the footwall of this fault-controlled carbonate platform consists of base of slope breccias triggered by steep slopes and coeval synsedimentary faulting.

Breaking-up of the carbonate platform produced up to 500 meter-thick breccia deposits at the base of slope apron, and the overall drowning



of the carbonate platform into a deepwater basin. The blackish layered sequence onlapping the carbonate breccias are thin bedded turbidites (strata dipping to the right), representing deepwater strata of the Black Flysch Group, a Middle Albian to Lower Cenomanian turbidite complex.

Incidentally, the island is connected to the mainland by a man-made bridge, Bartolini said. On top of the island – after 237 steps – stands an hermitage dedicated to San Juan.

Etymologically, the word *gaztelugatxe* comes from the Basque *gaztelu* ("castle") and *aitz* ("rock" or "crag"), forming "Crag of the castle."

The small church dates from the 10th century and seems to have come from the Knights Templar. The hermitage also houses various votive offerings from sailors who survived shipwrecks. Several legends surround this mystic landmark. □

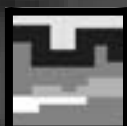
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EMD Announces Award Winners for San Antonio

The EMD has announced paper and poster award winners for its technical sessions at the recent AAPG Annual Convention and Exhibition in San Antonio.

The winners will be recognized at next year's meeting in Denver.

Best Paper Award

□ Ben Rostron, University of Alberta, Canada, and Steve Whittaker, Canada Capital Energy Corp., for "Geological Characterization for the IEA GHG Weyburn-Midale CO₂ Monitoring and Storage Project: Past Successes and Future Challenges."

President's Certificate (oral)

□ Terry Engelder, Penn State University, University Park, Pa., and Gary Lash, SUNY, Fredonia, N.Y., for "Crosscutting vs. Abutting Joints: A Reflection of Joint Normal Effective Stress."

□ Juergen Schieber, University of Indiana, for "Deposition and Sequence

Stratigraphic Framework of Late Devonian Black Shales in the Eastern U.S."

Best Poster Award

□ Michael S. Cameron, Devon Energy, Oklahoma City, Frank E. Walles, Devon Energy, The Woodlands, Texas, and Daniel M. Jarvie, Humble Geochemical, Humble, Texas, for "Quantification of Thermal Maturity Indices with Relationships to Predicted Shale Gas Producibility: Gate-Way Visualization and Attribute Technique."

President's Certificate (poster)

□ Robert Loucks and Stephan Ruppel, both with the University of Texas at Austin Bureau of Economic Geology, for "Shell and Grain Layers in the Barnett Shale: Event Deposition or In-Situ Accumulations?"

□ David Streit, Cynthia Dacre, Eric Wemmelmann and Curtis Joyce, all with MDA Federal Inc., Rockville, Md., for "GIS and Remote Sensing for 'Cradle to Grave' Hurricane Impact Assessment." □

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POSITION AVAILABLE

**Moncrief Chair of Petroleum Geology
Western State College of Colorado**

Western State College of Colorado invites applications for the tenure-track faculty position of Moncrief Chair in Petroleum Geology starting January or August 2009. Teaching responsibilities include courses in an expanded petroleum geology curriculum and core courses in the geology curriculum. Requirements include a doctorate in geology or related field, a commitment to undergraduate education and excellence in teaching. For full position information and application procedures, visit <http://www.western.edu/hr/jobs>. Screening of applications will begin September 2, 2008. AA/EOE

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IN EXPLORATION GEOPHYSICS
BOONE PICKENS SCHOOL OF GEOLOGY
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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 Geometrix control source audio magnetotelluric 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.

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NuTech Energy Alliance is excited to offer openings in our Business Development team as our domestic and international success continues to offer new opportunities for growth. NuTech is looking to place account representatives in our largest domestic market, Houston, which also serves as the location of our technical headquarters.

Position Overview:

This position requires sufficient professional experience in order to guarantee credibility as a fully trained professional. Account Managers maintain relationships with current clients, and work to identify and develop new clients and markets. Account Managers are additionally required to maintain awareness of new technologies.

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The **University of Calgary** invites applications for a Chair in Unconventional Gas in the Department of Geoscience (www.ucalgary.ca/geoscience) at the level of **tenure-track Associate/Full Professor**. We are looking for a senior scientist to build an internationally renowned geoscientific program in unconventional gas research.

The successful candidate will have a PhD and an international reputation in their field of research covering major aspects of the science and engineering involved in exploring for and producing unconventional gas reservoirs. Possible research areas might include one or more of tight gas, shale gas, coal bed methane or gas hydrates. The candidate will work with researchers in the departments of Geoscience, Chemical and Petroleum Engineering, and Mechanical Engineering, where there are ongoing activities in unconventional gas. The successful candidate will build a vigorous, externally funded research program that will become an internationally leading centre for developing innovative solutions to the challenges presented by the exploration and development of unconventional gas.

Evaluation of applications will begin **October 31, 2008** and continue until the position is filled.

Additional information about the position and the application process can be found at www.ucalgary.ca/hr/careers or by contacting geojobs@ucalgary.ca

All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority. The University of Calgary respects, appreciates and encourages diversity.

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DIRECTOR'S corner

Goal Set to Expand DL Programs

It was an unforgettable experience, what with meeting many fine practitioners of the profession, meeting classmates of college year and many of my former students who took me on field trips such as a memorable one from Midland, Texas, through the Marathon Basin. Hospitality was of the highest order – too high sometimes when I had to try and meet celebrations with a new group every night.

– John C. Ludlum (1961-62)

By RICK FRITZ

At the start of World War II the leadership of AAPG started a new program that was designed to send speakers to reach people all over the world. As a result, well over 100,000 people have been personally treated to important and useful geosciences information and data.

AAPG's leadership has decided to make a special offer to ensure the future of the Distinguished Lecturer (DL) program.



Fritz

The whole lecture tour experience was wonderful, and I'd do it all again. Perhaps the most memorable visit was my presentation to the Canadian Society of Petroleum Geologists ... I was especially impressed with the reaction I received from our Canadian colleagues, though. I don't remember how many hundred people were there that day. I just remember a sea of smiling faces.

– Fred Rich (1982-83)

AAPG's Distinguished Lecturers talk to over 8,000 people at 150 different locations each year. Last year we added the Distinguished Instructor (DI) program to provide in-depth instruction. AAPG's prime directive is to disseminate scientific information, and the DL/DI program is consistently one of AAPG's top programs in meeting that goal.

What is the future of this storied program? It's up to you.

The subject of my talk was "Geology and Secondary Recovery." At that time, waterflooding was used only in a few places. In many of my stops they told me that "waterflooding does not work in this area." What they had done was to take the worst well in the field and pour water down it. After all, what old superintendent is going to let an engineer put water down a good well?

– Parke A. Dickey (1945-46)

The list of AAPG Distinguished Lectures reads as a "Who's Who" of top AAPG figures. In the accounts of their tours they comment on the hospitality of their hosts and their satisfaction and pride in the Distinguished Lecturer program.

They are often met with travel difficulties, or equipment problems, but still say it's worth it.

We pushed Ray's plane out of its hanger and he set me to rotating the prop to distribute the oil throughout the engine while he went into the house to get some charts. Before long, the engine was running and we taxied uphill on the rather steeply dipping field to the head of the strip. At this point, two of the neighbor's dogs attacked the plane, and Ray had to do considerable jockeying to get them out of the way so we could take off.

– John J. Amoroso (1973-74)

The program is funded both by individual donations and AAPG's share of income as a sponsor of the Offshore Technology Conference.

AAPG plans to increase the annual

The list of AAPG Distinguished Lecturers reads as a "Who's Who" of top figures.

Editor's note: Full details on this year's Distinguished Lecture tours will be available in August on the AAPG Web site and in the next EXPLORER.

number of Distinguished Lecturers from 13-14 per year to at least 20 per year.

To make this goal a reality we need your help. Each "stop" or lecture costs approximately \$2,500, and we are asking AAPG members to consider setting aside pledges to support the Foundation's current financial campaign.

If you are interested please contact Rebecca Griffin in the Foundation office at 888-560-2644, or by e-mail at rgriffin@aapg.org.

Being selected as Distinguished Lecturer for the 1964 tour was a high point in my young career and important boost to my activities at Colorado School of Mines.

– Robert J. Weimer (1963-64)

For "named" DL/DI endowments, we have a great opportunity for major donors to expand this program. The Association and Foundation each have set aside funds to match at least two new named Distinguished Lecturers!

Currently, there are five "named" endowments in honor of the late Roy Huffington (see related story, page 65), Dean McGee, J. Ben Carsey, Allan Bennison and Merrill Haas/Wallace Pratt. A "named" endowment for a North American Distinguished Lecturer tour is \$300,000 and for a non-North American Distinguished Lecturer is \$350,000.

As a result of the match, a major donor will only need to pay one-half of the endowment to make a "named" DL or DI.

This is a rare opportunity for a major donor or a group of donors who would

like to name a DL/DI endowment. The fundraising team will be contacting potential donors for this program.

Again, contact Rebecca Griffin if you have interest in this new offer.

Never before, never since have I met so many wonderful, talented, dedicated people! The camaraderie of those days was so indelibly inscribed in my memory as to have become a major aspect of my life and career. No amount of money, no compilation of words could ever serve to compensate for the opportunities my lecture tour provided and for the contributions that I hope it helped me make to AAPG, to our profession and to the nation. Thanks – and thanks – and thanks

– Grover E. Murray (1953-54)

Thank you! Dr. Murray. And thanks to all of those who have served in this program. We look forward to building the program into the future.



A snowy evening, my wife and I arrive at the lecture hall with just two minutes to spare. She slips in quietly to a back row. I am nicely introduced and the lecture is on its way. But I've had a lot of travelling and my throat is quite hoarse.

The slide projector is an antique, and the fan makes an ungodly clatter. Wife cannot hear lecture so asks a distinguished white-haired professor-type sitting next to her to call to lecturer: "Please speak up – we can't hear you in the back row!"

The distinguished professor leans over to wife and whispers: "Don't worry about it. He's only talking absolute nonsense."

– Rhodes Fairbridge (1954-55)

'The new business of energy'

Special 'EMD Day' Set in Cape Town

EMD has something very special planned for the upcoming AAPG International Conference and Exhibition in Cape Town, South Africa: an entire day of EMD-related events and activities.

We've asked Jeff Aldrich, this year's international meeting's general vice chair and also EMD's African Region councilor, to provide a preview of all that is planned.

– CRETIES JENKINS
EMD President



Jenkins



Aldrich

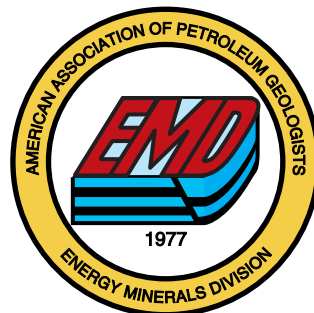
The main highlight for our Division is what we're calling EMD Day, co-sponsored with the Geological Society of South Africa, which will offer several items of particular interest to not just EMD members but others who are engaged in energy mineral activities.

This EMD emphasis will be held Wednesday, Oct. 29, featuring two oral and four poster sessions that cover topics of "The New Business of Energy."

Our goal in putting all of the EMD sessions on one day is to draw South African coal and uranium geologists to the convention who could not otherwise consider investing three days for the talks.

Offered on EMD Day will be:

- ✓ Four presentations on coal.
- ✓ Five oral talks on oil shales.



- ✓ Four posters on tight or basin-centered gas plays.
- ✓ Seven posters on gas hydrates.
- ✓ Six posters on CO₂ sequestration.
- ✓ Other talks and posters on CBM, uranium, geothermal.

And that's not all. Additional activities will include:

- ✓ An EMD "open house" Tuesday night, featuring a talk on "Clean Coal

Technologies" by William Ambrose that is open to all registrants or EMD members.

✓ A two-day short course on CBM by Andrew Scott on both the fundamentals and the newest techniques for field evaluation (Thursday and Friday, Oct. 30-31).

✓ A field trip to the Karoo coal fields of South Africa, including a visit to Grootegeluk coal field, the largest open pit colliery in the country (Monday-Thursday, Nov. 3-6).

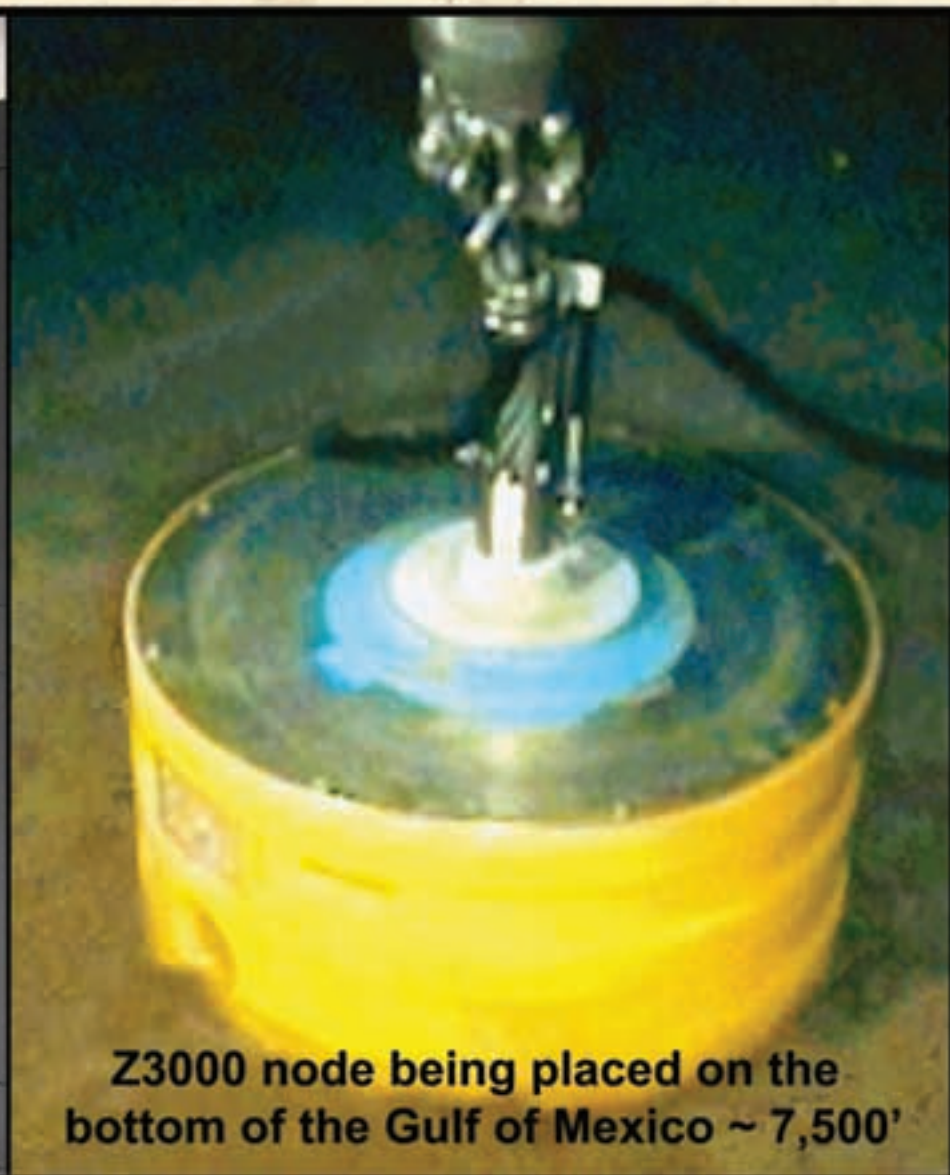
* * *

Africa Energy, Global Impact is the convention's theme, and the EMD clearly is well-positioned to deliver an excellent program that includes both the local flavor of the GSSA and the international expertise of the EMD.

We hope to see you at the convention, where you will be sure to experience one of the most exciting and rewarding AAPG international conferences ever. □

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Everyone likes to brag about their state-of-the-art processing. That's okay. We do, too. But no matter how advanced your algorithms, they're limited by the quality of the data that you're working with.

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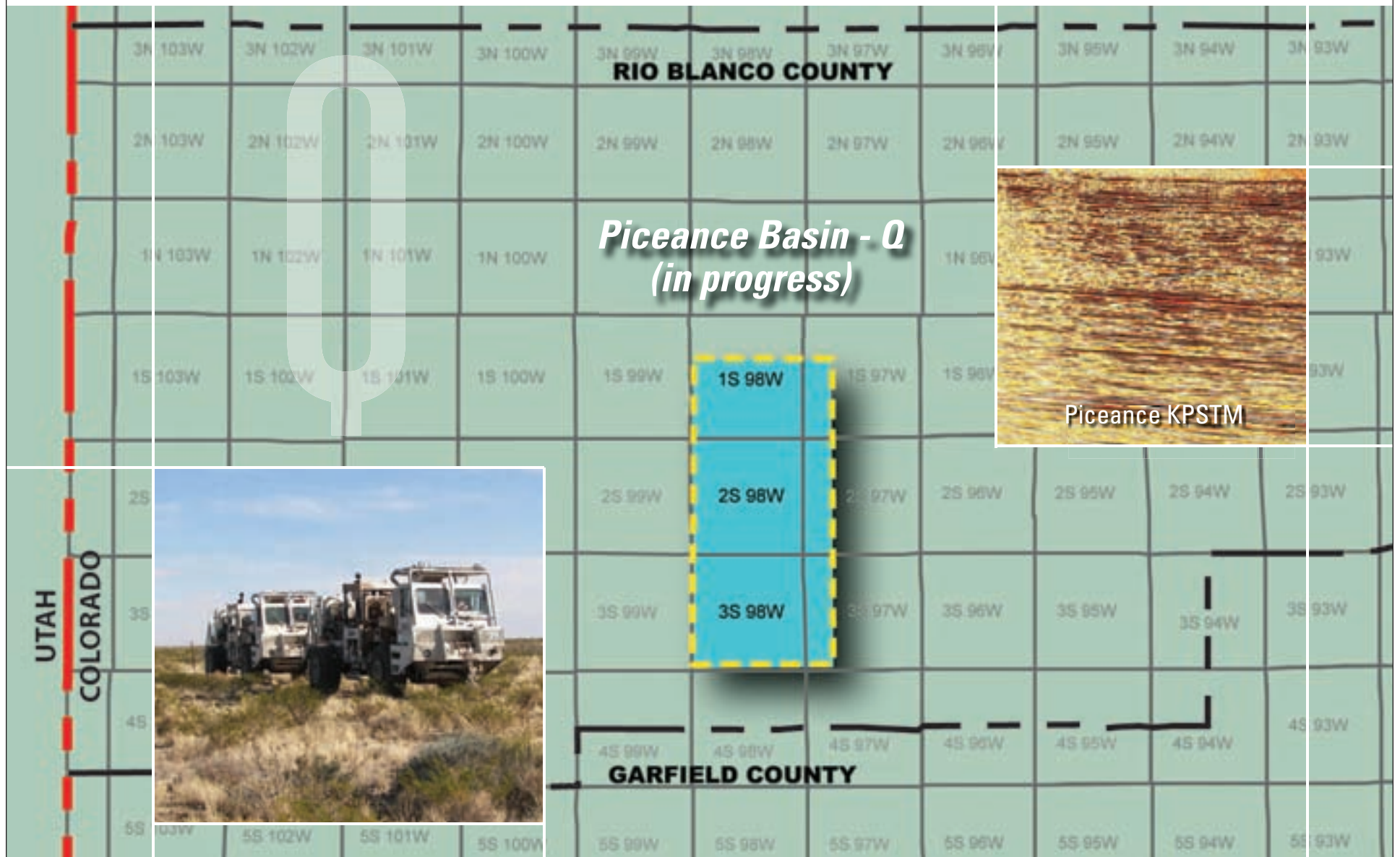


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