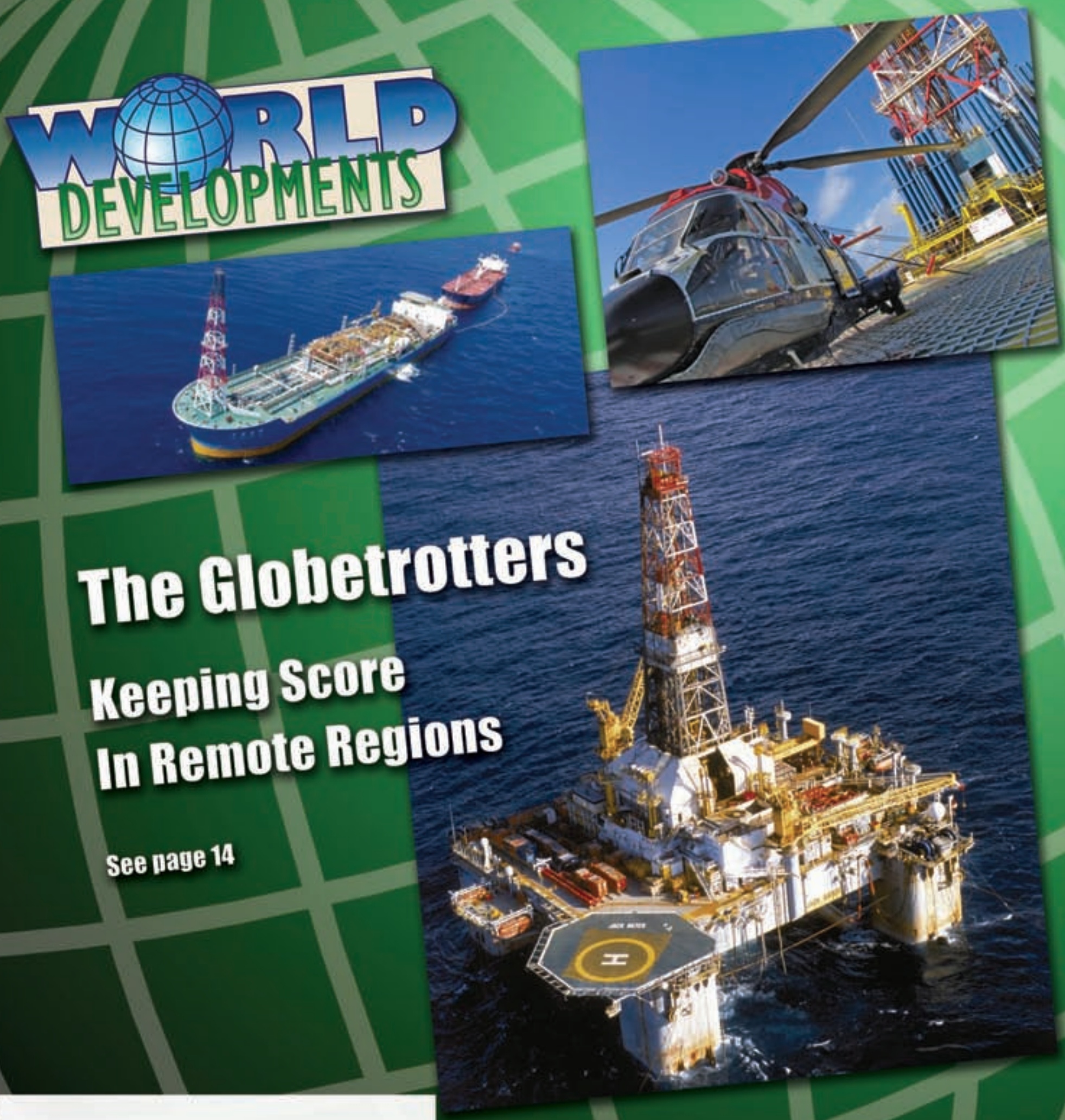
AAPG AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, AN INTERNATIONAL ORGANIZATION

EXPLORER

JANUARY 2007



The Globetrotters

Keeping Score In Remote Regions

See page 14

Vol. 28, No. 1
January 2007

AAPG EXPLORER

On the cover: What in the world is going on? This moth's EXPLORER, our annual World Developments issue, provides a glimpse into the 2006 success stories that highlighted a year of several important finds – including those shown on the cover. See page 14. The two top photos are scenes from the Wenchang oil field in the South China Sea, and the larger image is the Jack Bates semi-submersible rig used to drill the Clio-1 well in offshore northwestern Australia. Photos courtesy of Husky Energy (Wenchang) and Chevron (Clio-1).

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Vol. 28, No. 1
The AAPG EXPLORER (ISSN 0195-2986) is published monthly for members. Published at AAPG headquarters, 1444 S. Boulder Ave., P.O. Box 979, Tulsa, Okla. 74101, (918) 584-2555. e-mail address: postmaster@aapg.org
Periodicals postage paid at Tulsa, Okla., and at additional mailing offices. Printed in the U.S.A.
Note to members: $6 of annual dues pays for one year's subscription to the EXPLORER. Airmail service for members: $45. Subscription rates for non-members: $63 for 12 issues; add $67 for airmail service. Advertising rates: Contact Brenda Merideth, AAPG headquarters. Subscriptions: Contact Veta McCoy, AAPG headquarters. Unsolicited manuscripts, photographs and videos must be accompanied by a stamped, self-addressed envelope to ensure return.

POSTMASTER: Please send address changes to AAPG EXPLORER, P.O. Box 979, Tulsa, Okla. 74101.
Canada Publication Number 40046336.
Canadian returns to: Station A, P.O. Box 54, Windsor, Ontario N9A 6J5
e-mail: returnsIL@imex.pb.com

PRESIDENT'S COLUMN

Meetings Refreshing For Professionals

By LEE T. BILLINGSLEY

This past fall I had the opportunity to attend a couple of enlightening conventions.

✓ First, Buffalo, N.Y., provided my inaugural trip to an AAPG Eastern Section meeting. Usually I work on projects either along the Texas Gulf Coast, in the Texas portion of the Permian basin or the Powder River Basin in Wyoming. I thought the only petroleum geologists in the eastern United States either headed west soon after Drake's well declined, or they represented East Coast investments in oil and gas projects generated by geologists from Texas.

Buffalo changed all that.

The meeting attracted a dedicated, friendly, close-knit group of petroleum geologists that freely shared their research. Geologists from industry, state and federal government and universities all appeared to cooperate for the sake of the science. The students were well-versed on the applications of geology to the search for elusive hydrocarbons.

To further dispel my misconceptions, I even met several geologists from Texas. They were in Buffalo because they were either already working the eastern U.S. basins or trying to get started there.

Thanks for the enlightenment.

✓ Next, the AAPG International Conference and Exhibition (ICE) in Perth, Australia, provided a lesson in cooperation on many levels.

The conference provided a welcome break from the partisan, self-serving posturing that dominates everyday news anywhere in the world. The ICE drew 2,626 participants from 65 countries, with 283 registrants traveling there from the United States.

As an international organization, AAPG not only disseminates its technical knowledge base worldwide, but also facilitates international opportunities for U.S.-based members. It is refreshing that AAPG provides a forum and mechanism for people from all over the world to share and learn.

Although in many aspects the field of petroleum geology is very competitive, the outcome from our work – namely finding energy – is very additive to the world. When we find a new field it creates new wealth for individuals, companies, governments and service companies.

Maybe that is why geologists enjoy talking to each other about their work; talking about new fields is almost like talking about our children or grandchildren.

The Perth meeting was particularly successful because the local organizing committee/host society (Petroleum Exploration Society of Australia) and AAPG staff/members each contributed their strengths. The Aussies engineered one of the best technical programs we've ever enjoyed at an international conference, and AAPG provided superb organization that created the look and feel of an AAPG annual convention.


Billingsley

Several representatives from various countries were anxious to host a future ICE.

Thankfully, the Aussies provided their own flavor to the meeting in the form of one of the most memorable convention events I have ever attended. At the end of each meeting they traditionally have a "Sundowner," scheduled on the last day after the last paper and after the exhibit hall closes.

In Perth it had no format other than beer and wine served on a large patio, which also happened to overlook a river – but it provided a terrific opportunity to just wind down and socialize.

In Perth several hundred – if not a thousand – attendees created a loud roar from excited conversations, which was a fitting testament to the success of the event and convention.

It felt like dessert after a fine meal.

* * *

The AAPG Executive Committee held its own meeting in Perth, and we reviewed AAPG's position papers, in general, and the Global Climate Change position, in particular.

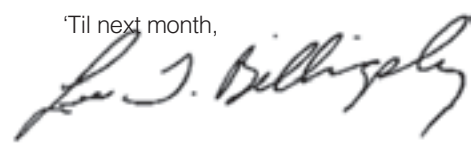
We decided that some topics, such as global climate change, are not appropriate for recommended government policies. Instead, AAPG should publish "Fact Sheets," and individual members can use the Fact Sheets to influence government policies as they wish.

For more information on AAPG's position on global climate change and a previously submitted Global Climate Change Card, see pages 37 and 37.

* * *

I hope everyone had a restful holiday, because now is about time to plan to attend London APPEX March 20-22 and AAPG's Annual Convention in Long Beach, Calif. April 1-4.

'Til next month,



Candidate Data Included This Month

Biographies, pictures and statements from all candidates for AAPG office are available in this EXPLORER as an insert on page 38.

The information also is available online on the AAPG Web site, www.aapg.org, and will remain there through the election period.

The candidates were given the opportunity to respond briefly to the subject: "Why I Accepted the Invitation to be a Candidate for an AAPG Office."

Responses and biographical information were provided by each candidate and edited only for grammar, spelling and format.

Online balloting will be made available in the spring of 2007. Ballots will be counted on May 16. ❑

Levees vs. Wetlands Get Spotlight

Subsidence a Lurking Villain

By LOUISE S. DURHAM
EXPLORER Correspondent

In the aftermath of Hurricane Katrina, the rhetoric about the pressing need to save Louisiana's rapidly disappearing wetlands escalated considerably. After all, one of the many valuable roles the wetlands play is to help protect low-lying population centers from some of the ravages of hurricanes.

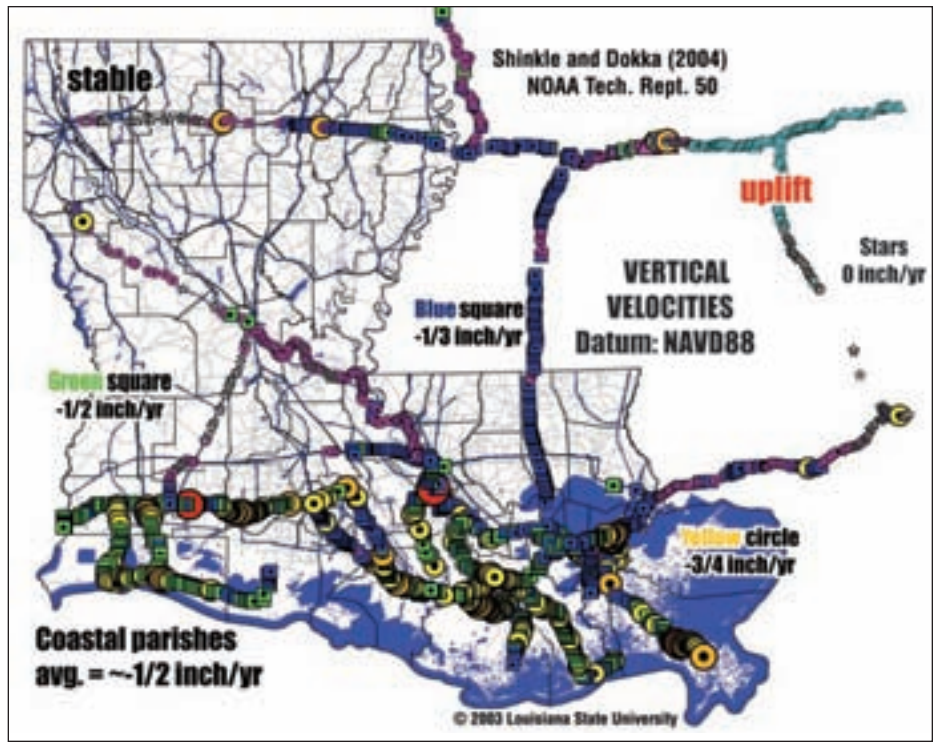
Vanishing wetlands, however, are just a symptom of a far bigger disease crippling the coast, according to Roy Dokka, Fruehan endowed professor of engineering at Lousiana State University and former Adolphe G. Gueymard professor of geology.

The crippling disease?

It's subsidence; and it's way more extreme – and extensive – than previously thought, according to Dokka.

Coastal Louisiana has subsided approximately two- to-four feet since 1950. Furthermore, the problem extends inland from the coast for hundreds of miles, especially along the Mississippi River valley, Dokka noted when testifying before a U.S. congressional subcommittee in October 2005.

Both natural and human-induced activities are recognized to play a role in lowering the land surface relative to sea level since the last sea level low stand. Levee building, which restricts the natural accumulation of sediment that occurs when rivers overflow their banks, has received its share of the blame. Prior to extensive levee construction, the deposited sediments helped provide a natural offset to subsidence.



Louisiana is threatened by subsidence that is extensive, extreme and expanding, according to one geoscientist who is trying to alert the public and lawmakers to a situation that he says is easy to see but complex to solve.

"Some people say you can fix the wetlands by pouring water out into the coast like nature," Dokka said. "That's true, but people can't live in south Louisiana without hurricane levees, because of the low and ever-sinking landscape.

"Fundamentally, there's no remedy; if you live there, you better have a levee in front of you," Dokka said. "But we need to do both, because what would Louisiana be without its wetlands?

"To understand the subsidence, you have to understand the geology," Dokka noted. "The group that understands the geology of the area best is the oil industry, because what you see in the subsurface is exactly what's going on today.

"But the average coastal scientist doesn't know what the global oil industry knows about the evolution of the Gulf of Mexico."

The Big Picture

In fact, Dokka asserts that key aspects of the coastal work that has been done in the region is flawed because it has failed to integrate what's known from the geological history of the Gulf.

Any discussion of subsidence requires a look at the impact of the Mississippi River, among other phenomena.

The river carries massive volumes of debris from inland areas, which are deposited in its delta region where the river enters the Gulf. The enormous weight continues to depress the earth's crust and mantle.

Furthermore, the pile of sediment is weak and unstable, and large segments have slumped southward along south-dipping or sloping faults. This accumulation of gargantuan quantities of sediments also has led to the mobilization of underground salt, according to Dokka.

"The Mississippi delta constitutes a massive load on the earth's crust and is causing it to bend," he said. "That's an

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Subsidence

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idea that was first noted in the literature in 1870 by one of the renowned people in geology, and the idea was later picked up by Richard Russell (the noted late geographer who co-founded the LSU geography and anthropology departments in 1928 and later founded the LSU Coastal Studies Institute).

"In fact, if you want to understand what's happening in the coast, go back and read Russell's work in the '30s," Dokka said. "That's all been forgotten, and now it's all about the wetlands."

Citing Statistics

There's plenty more to worry about than the causative elements per se.

In fact, a whole new debate has emerged concerning subsidence rates, following the July 2004 publication of NOAA Technical Report NOS/NGS 50: *Rates of Vertical Displacement at Benchmarks in the Lower Mississippi Valley and the Northern Gulf Coast.* The report was co-authored by Kurt Shinkle at the National Geodetic Survey and Dokka.

The effort entailed measurement of modern gulf coast subsidence based on first order geodetic leveling measurements on benchmarks and tidal records published by NOAA.

To assess the accuracy of the National Spatial Reference System in the region, Dokka and Shinkle computed vertical motions on 2,710 benchmarks throughout Louisiana, Mississippi and coastal areas of Alabama and Florida. The fixed datum used in Technical Report 50 is the North American Vertical Datum of 1988 (NAVD 88).

The conclusion from the precise geodetic measurements: Subsidence rates in southern Louisiana are significantly higher than previously thought, with the mean rate pegged at 0.43 inches per year.

Additionally, it was concluded subsidence also is occurring far beyond the Mississippi River delta wetlands.

Shinkle and Dokka noted the data demonstrate subsidence has multiple human-induced and natural causes that include a large tectonic component and, locally, a substantial fault component.

Nature vs. Nurture

Bob Morton, research geologist at the U.S. Geological Survey in St. Petersburg, Fla., doesn't necessarily buy Dokka's conclusions that much of the subsidence is due to natural geologic events including both tectonic and depositional processes, such as crustal down-warping, salt movement, gravity slumping, sediment loading and compaction, along with eustatic sea level rise.

For instance, Morton said subsurface fluid withdrawal (read: oil and gas) produces the same results as sediment loading.

"I'm not saying all wetland loss is associated with oil and gas production and recent extraction," Morton said, "but a pressure drop in the reservoir is the same as adding new sediment on the surface. A change in the state of stress in the subsurface is quite capable of causing compactional subsidence in the reservoir and also movement along the faults."

Morton cited two lines in the NOAA study that crossed the structural grain of the Gulf Coast region in one area where he said the data indicated the highest rates of subsidence occurred over oil and gas fields in that particular locale.

Dokka emphasized, however, the data in Technical Report 50 do not support oil and gas extraction as a substantial contributor to subsidence, even at type areas.

Despite considerable behind-the-scenes exchanges between the U.S. Geological Survey and NOAA about the methods and numbers associated with Technical Report 50, Morton acknowledged the numbers put out must be accepted on face value.

"NOAA is still the official government agency responsible for elevation and elevation change in the U.S.," he noted.

Technical Report 50 is fundamentally a geodetic report rather than an interpretive effort, and Dokka said the geodetic method used is as good as it gets.

The noted Mississippi River delta expert and LSU Boyd professor, James Coleman, concurs.

"I haven't seen the results (of the study)," Coleman said, "but setting those benchmarks up was the right thing to do and hadn't been done before. The tracks he did were good tracks in the right place, and the benchmarks he picked were good and in areas both in and out of oilfields.

"Basically, it just showed a general overall subsidence of the whole coast," Coleman said, "like everyone's been saying for years."

Making it Legal?

Dokka attributes any criticism of the report to the fact that the implications of the documented high rates of subsidence are downright scary to many people.

Consider the rebuilding of storm-ravaged New Orleans, for instance. How high should the levees actually be built to protect the inhabitants well into the future if the land they're built on continues sinking at a rapid rate?

There's another scary scenario just lurking in the shadows.

Dokka noted politics already have determined public policy where wetlands and coastal issues are concerned. Indeed, it's widely known that state and federal agencies have long been jockeying for – and receiving – federal funds for myriad projects focused on saving and reconstituting the wetlands, touting this approach as a kind of be-all, end-all solution to coastal flooding and other problems.

He cautioned that professional geological organizations and the industry as a whole must help educate the public on the geological reality of the Gulf of Mexico – before lawsuits begin coming down the line.

"You can't sue God," Dokka said, "but you can sue the oil companies. The oil companies have money, and this is all about money ultimately." ❑

An Affair Not to be Missed

Prospects' Charms to be Displayed

If you want to rekindle an exploration romance, NAPE could be just the place to do it.

By DAVID BROWN
EXPLORER Correspondent

Some geologists have a knack for attracting money to their prospects and properties.

Some geologists couldn't sell a play if they were Shakespeare.

Thousands of hopeful sellers and buyers will gather in Houston for the 15th NAPE Expo on Feb. 1-2.

As always, some prospects will get funding and some will remain, unloved, on the table.

Why do some plays sell and not others?

"I think it's a function of romance," said Eric Hanson, president of Hanley Petroleum in Houston and past chair of the NAPE board of directors and past president of the American Association of Petroleum Landmen.

That puts the question in a different light:

What makes a buyer fall in love with an exploration prospect?

The Hot Spot

There's no perfect answer, said Roger Soape, current NAPE chair.

"In recent years, the market seems to have favored those prospects that are ready to drill, or almost ready to drill," he noted.

Often, good supporting data will attract industry interest, especially seismic work.

"People are very dependent on 3-D seismic these days. It may be that projects that are not accompanied by 3-D seismic are at a disadvantage in the marketplace," he said.

Hanson agreed that "you'll see a lot of 3-D-defined, one-and-two well prospects being offered."

"There's a lot of pure geology plays. There's a lot of trend plays. There's a lot of close-in, corner-shot deals," he added.

Most of all, buyers will be looking for the concept of the moment. And sellers will be featuring it.

"There will be lots of shale – all the shale plays will be hot. It seems like whatever is hot at the moment, that's what the play is going to be," Hanson said.

Higher product prices have brought more money to exploration and turned attention back to almost-forgotten domestic prospects.

Some people look at those areas like old flames.

"People say, 'We put that deal together back in '85,' then they changed jobs and companies, and now they have a chance to revisit a play," Hanson commented.

If you want to rekindle an exploration romance, NAPE could be just the place to do it.

Soape founded Roger A. Soape Inc., a Houston land services company, in 1980.

He's seen the prospect expo grow from a small, barebones meeting in a hotel conference room to today's major event at the George R. Brown Convention Center.

In the early years, sellers used poster board, butcher paper and fold-up tables to make their prospect pitches, Soape recalled.

"We certainly didn't have the elaborate and attractive commercial set-up that we have today," he said.

But it's the number and variety of prospects and properties, not just the sizzle, that have made NAPE a can't-miss event.

"You are right there at ground zero where projects are being funded and developed," Soape explained.

"It has turned out to be the place to be, at least once a year and maybe twice a year, if you are in the oil and gas business," he added.

Tips of the Trade

Two well-known, recent successes in U.S. exploration had starkly different histories.

Wolverine Gas & Oil Corp. geologist Doug Strickland developed an anticline play in the central Utah fold and thrust belt area (April 2005 EXPLORER).

Famously, Wolverine took the project to two prospect expos and offered it to more than 60 potential industry partners, without finding support.

Wolverine had to turn to small private investors outside the industry to fund its Utah exploration.

In Montana, geologist Dick Findley identified the middle member of the Bakken shale as a potential oil-rich bonanza (June 2006 EXPLORER).

Findley's company, Prospector Oil, didn't have the capital to develop the extensive shale play. Based on a recommendation, he took the project to Lyco Energy Corp. in Dallas.

Company chief Bobby Lyle and his staff

continued on next page

Location, Location, Location: Why a Good Booth Matters

Out of all the exhibitors at the NAPE Expo in February, the most aptly named could be "5 Guys Looking For a Deal."

This Tulsa quintet will be on hand in Booth 2944, in search of deals for prospects, royalties, properties, whatever.

Steve Area and Kyle Travis are principals in Patriot Resources LLC. They're joined by Larry Akers, Bob Anderson and Gary Christopher.

"We're all in the oil and gas business and we're all looking for oil and gas opportunities to invest in," Area explained.

"We said, 'What's our common element? Oh – we're all looking for a deal,'" he added.

Area said the prospect expo offers an outstanding networking opportunity and a chance to see friends, helpful because 5 Guys Looking For a Deal does "a lot of business with friends.

"NAPE provides a great exposure," he added, "but you also see what deals are out there, where the hot spots are."

Why does 5 Guys need a booth at NAPE, since they're in the business of investing and not offering prospects?

"First of all," Area explained, "we wanted a place to sit."

– DAVID BROWN

Sure, You Think It's a Good Deal – But What About *Them*?

Steve Brachman is division geologist for Pogo Producing Co. in Houston and current president of the Houston Geological Society.

As someone who generates plays and also evaluates outside prospects, Brachman offers three pieces of advice:

✓ Be certain your project makes sense not only for you, but also for your partners.

Brachman says he sees lots of deals that make perfect sense for the prospect generator, but no sense at all for a potential industry partner.

✓ Make sure you really understand the subsurface – that you really know your area.

One geologist offered a prospect with control from 400-500 wells, he said, but then the geologist added, "We haven't gotten around to correlating them yet."

✓ Make sure you have access to the project area.

It sounds obvious, but you have to know all the leasing and access details for a prospect to be viable.

– DAVID BROWN

continued from previous page

analyzed the Bakken prospect immediately, and Findley had a deal in less than 48 hours.

Those stories also have famous endings, with the discovery of the Covenant oil field in Utah and prolific Bakken oil production in Montana-North Dakota.

Two highly successful plays.

One got backing, the other struggled.

"Timing is everything," said Hanson, and luck plays a major part, too.

You can still improve your odds:

✓ Bring a complete package.

Buyers like to see all the bases covered, to the extent possible. NAPE is a place for fully worked-out prospects, not vague possibilities.

✓ Provide all the support you can.

When you have to defend your project, you'll need as much evidence as possible. True, 3-D seismic is a good thing – but not absolutely required.

✓ Be ready to run.

The time from show-to-go is shrinking as more money comes into exploration. Think about drilling sooner rather than later.

✓ Numbers matter.

Maps alone won't do. You might be dealing with some ridiculously over-quantitative people.

✓ Know your customer.

Prospect expos provide an opportunity for multiple seller-buyer interactions. Make sure you tailor your presentation for each potential industry partner or investor.

✓ Make a case for related, nearby production.

This never changes. Prospects sell better when they are close to known production.

Let's say your play is in western Alaska and the nearest equivalent production is in east Alabama.

Alabama and Alaska.

Absolutely contiguous – alphabetically.

And the opposite also applies.

Why did Wolverine Oil and Gas have trouble selling a play in central Utah?

Maybe it's because that area reportedly had seen 58 dry holes and no production in its exploration history.

Rule of thumb: If you're pitching a prospect in an area with more than 57 dry holes, you might have a challenge. Be prepared.

Reaping the Rewards

Everyone knows the biggest attraction at NAPE this year.

The 2006 run-up in oil and gas prices has given investors and industry partners cash to spare.

"There's a lot of money chasing plays,"

See **I ♥ Deals**, next page

Preregistration Is Open for Long Beach

The technical program is in place, announcements have been mailed and registration is open for the 2007 AAPG Annual Convention in Long Beach, Calif.

The meeting and exhibition will be held April 1-4 at the Long Beach Convention Center, located right on the Pacific Coast. The theme is "Understanding Earth Systems – Pursuing the Checkered Flag."

It's the first time AAPG has held its national meeting in California since the 1996 convention in San Diego, and organizers expect a large attendance.

Long Beach, located at the center of California oil production in the prolific Los Angeles Basin, boasts good weather, spectacular outcrops, nearby oil field analogs and popular tourist attractions.

Among the technical program's important elements will be oral and poster sessions dealing with results from the recent Hedberg Conference on "Understanding World Oil Resources" (see page 12).

Other meeting attractions include:

✓ The All-Convention Luncheon, featuring Michael J. Economides' talk on "Energy Geopolitics." He is a professor at the University of Houston's Cullen College of Engineering, editor-in-chief of the Energy Tribune the winner of this year's AAPG Geosciences in the Media award.

✓ The Michel T. Halbouty Lecture, given by Kurt Rudolph, of ExxonMobil Exploration, who will speak on "Current Petroleum Exploration Trends: Prudent Investments or Irrational Exuberance?"

✓ A total of nine special sessions, ranging from historical industry reviews to current research, to geology in space, to geopolitics to "Women in the Energy Industry: Developing Negotiation Skills."

✓ A huge exhibition featuring the latest in industry technology and information. (A reminder: Exhibit space contracts remain available on a first-come, first-serve basis, at www.appg.org.)

Updated information on the meeting and technical program – including instructions for registration and housing options – can be found on the AAPG Web site, at www.aapg.org. ❑

I ♥ Deals

from previous page

Hanson said.

With plenty of dollars available, organizers expect a hot environment for deals at NAPE 15.

That wasn't always the case.

"It's interesting – NAPE was founded as a spark plug or a generator of activity. It was at a time when exploration was at a very low level," Soape said.

In the beginning, no one knew if geologists and other prospect generators would be willing to share play details in public, Soape recalled.

"There were a lot of skeptics when it originally started," he said.

By necessity, prospect specifics have to be closely guarded, even at a forum like NAPE.

"People have been reluctant to share their work product, because so much of it is creative," Soape said.

"We encourage sellers at NAPE not to share highly confidential or sensitive information publicly," he added.

Instead, investors and sellers can meet privately away from the expo floor to discuss specifics and negotiate, Soape said.

From a modest beginning, NAPE blossomed into a major success.

Soape said booth sales have been running 10-15 percent above last year's pace, and he expects a total attendance of about 14,000.

The size and scope of the two-day expo have produced one of the few complaints about NAPE.

Some registrants say two days aren't enough.

Soape acknowledged the complaints about time limitations, but said he prefers a short timeframe.

"Because it's such a condensed period of time, it forces everybody to get busy and get things done in those two days," he explained.

In addition, he said, the NAPE online Web site features an interactive floor plan and exhibitor list for advance scouting.

"A viewer can look at a lot of things online and kind of pre-screen how to spend time," Soape said.

He won't make predictions about the kind of prospects that will sell, except for their unpredictability.

"For whatever reason, the types of projects that investors are looking for seem to change over time," he said.

You can be sure of finding a wide, and even wild, variety of offerings.

"NAPE is a very inclusive event," Soape said. "And that's part of the fun."

NAPE is presented by NAPE Expo LP, comprised of the AAPL, AAPG, Independent Petroleum Association of America and SEG as limited partners. ❑

Stars Coming Out For Benefit Lunch

In addition to an expanded international presence, this year's NAPE will offer a unique industry luncheon theme.

Singer Larry Gatlin, NASCAR driver Kevin Harvick and commentator Benny Parsons will headline an event to raise money for wounded and disabled veterans of the Iraq and Afghanistan campaigns.

Attendees make a minimum contribution of $50 to attend the luncheon, and all funds go directly to the Coalition to Salute America's Heroes, according to NAPE chair Roger Soape.

NAPE Expo LP will underwrite all costs for the luncheon, and "Shell has stepped up as a major donor/sponsor for this event," he noted. ❑

Report Due in Long Beach

Hedberg Views World Resources

By RICHARD NEHRING

How much oil remains to be produced?

When will world oil production peak?

When will the world run out of oil?

These are serious and increasingly salient questions – for the world community as well as the upstream professions.

Unfortunately, many treatments of these issues rely on an outdated and increasingly limited conceptual framework (the "Hubbert Method") tied to a highly constricted view of the resource base.

On the other hand, many published projections of future world oil production blithely ignore the many financial, political, logistical and manpower constraints on developing oil resources as well as the qualitative and quantitative limits of the oil resource itself.

To promote a rigorous discussion of these questions, an organizing committee drawn primarily from AAPG's Committee on Resource Evaluation convened a Hedberg Research Conference on "Understanding World Oil Resources" in November in Colorado Springs, Colo.

As the conference title indicates, the emphasis of the conference was not simply on world oil resources, but on *understanding* them. What do we really know about world oil resources? What are the major ambiguities, uncertainties, and unknowns revolving around world oil resources? What approaches, concepts, methods, and terminology promote a better understanding of world oil resources? Which mislead and thwart our understanding?

Casting a Broad Net

Because the issue of world oil resources has many facets, different perspectives are essential to achieve an adequate understanding. Conference participants intentionally included a broad array of relevant perspectives:

✓ The 75 participants came from 17 countries on five continents.

✓ They came from a variety of organizations, including 15 major international, national and leading independent oil companies; 10 national, state and provincial geological surveys and resource agencies; and several service and consulting companies, universities and research institutes.

✓ All of the broad upstream professions – geology, geophysics and petroleum engineering – were represented, including official representation from both AAPG and SPE.

✓ Many key subspecialties also were represented, including petroleum resource assessment, integrated reservoir management, petroleum system analysis, horizontal and multi-lateral drilling and petroleum geochemistry.

The conference format differed from most prior Hedbergs: Only one session – the first morning – consisted of oral presentations, which emphasized assessment methodologies and provided essential background for evaluating the subsequent posters.

Three poster sessions provided empirical grounding, covering both conventional and unconventional oil resources. The two conventional poster sessions assessed both recovery growth and future discovery potential.

Because world oil resources are concentrated in a small number of major provinces and, within those provinces, in a small number of giant and supergiant fields, these posters concentrated on those provinces with an additional potential beyond current known recovery of at least five billion barrels each.

The poster sessions on unconventional resources included major deposits of oil from mature source rocks, which is just beginning to come into prominence with the development of the Middle Bakken in the Williston Basin in Montana and North Dakota.

We did not include in our deliberations conversions (such as gas-to-liquids or coal-to-liquids) or direct oil substitutes such as biofuels.

Continuing the Process

This Hedberg's central focus was the discussion sessions; nearly 20 hours were devoted to thrashing out the issues surrounding oil recovery growth, future discovery potential and unconventionals.

Certain themes reoccurred in these lively (but rarely overheated) discussions, including:

✓ The need for better conceptual and definitional clarity.

✓ The importance of understanding geological characteristics of each resource.

✓ Using comparable units for characterization different types of resources (e.g., in-place for both conventional and unconventional).

✓ Avoiding unjustifiable constitution of the true uncertainties.

The conference was only the beginning of process within AAPG to grapple with this issue. Currently the conference organizing committee is digesting, summarizing and elaborating on the conference discussions.

The initial presentation of the conference results will occur in special oral and poster sessions at the AAPG Annual Convention in Long Beach, April 1-4. That will be followed by a poster session presenting about half of the Hedberg posters.

Following the convention, the oral presentation from both the conference and the convention, together with the posters, will be combined into an AAPG publication.

We welcome suggestions and comments of the AAPG membership to assist us in this project.

(Editor's note: Nehring, president of NRG Association, Colorado Springs, Colo., was chair of the Hedberg Understanding World Resources Conference.) ❑

Important Discoveries Opened Horizons

’06 Charts Some Remarkable Finds

In a year of nationalizations (Venezuela and Bolivia, for instance) and severe contract and political challenges (Russia and just about everywhere else), 2006 was a year with few jaw-dropping discoveries being reported.

However, there were some important finds that opened up some new areas, bolstered nearby producing areas and provided more building blocks for the future.

And just because jaws didn’t drop doesn’t mean they weren’t notable.

The following is a list provided by IHS (formerly IHS Energy) of major discoveries over the past year, with IHS commentary on the impact of the finds and some scouting reports on the wells.

Australasia

Australia – Clio 1. Drilled by Chevron, it is located to the west of Gorgon. Although no official reserves estimate has been released, it is understood to be “significant” and to have encountered a 190-meter gas column in the Mungaroo Sands, the biggest to date in Australia.

It also is rumored to be lower in CO_2 than the nearby Gorgon Field, which could mean that the Gorgon gas project could be developed without initially requiring so much CO_2 re-injection and so lowering the upfront development costs.

(See related story, page 16.)

Australia – Xena 1ST1. Drilled by Woodside, it is not a large discovery (reserves estimated at less than 0.5 Tcf), but it is located in the same block as the 2005 Pluto discovery, which is undergoing a fast track LNG development.

On its own, Pluto is considered just about large enough to support such a project. However, various developmental problems, such as much of the Burrup Peninsula becoming protected due to Aboriginal rock art and the possibility of domestic gas reservations, mean that additional gas, again discovered on a 100 percent Woodside-owned basis, can only help this project fly.

Australia – 2006 has seen very few significant oil discoveries, with the biggest commercial success being Tap’s Amulet discovery on the North West Shelf. This has reserves of 10-15MMbo.

Other significant discoveries, for commercial rather than size reasons, were Coogee’s Swift North and Swallow wells. Together with Montara, these discoveries have reserves in the region of 30 MMbo (24 MMbo from Montara) and will now make a joint development conceivable.

This could help open up the Ashmore and Cartier region to future exploration and development activities.

Papua New Guinea – SPI’s Elk 1 wildcat in Papuan Foldbelt license PPL 238 is potentially a significant find that has tested up to 50 MMcfg/d, while a second DST over the interval 1,640-1,856m flowed 21.7 MMcf/d through a 60/64-inch choke.

High quality condensate with an API between 46-49° also flowed.

Analysis suggests the existence of a possible oil leg at Elk and a theoretical gas column in excess of 1,000 meters.

Commonwealth of Independent States (CIS)

Kazakhstan – Petrom claims its Rovnaya South 1 wildcat in the Turgay Basin is a significant discovery, with the well flowing 6.9 MMcfg/d and 440 bc/d, from what is thought to be the Middle Jurassic Doshchan Play.

Kazakhstan – TengizChevroil wildcat Ansagan 1X, some 18 kilometers west of the Tengiz Field, establishes a 135-meter oil column in a low permeability reservoir in what is believed to be a pre-salt Carboniferous limestone unit. The result high grades a number of pre-salt structures in the area.

Russia – The Vasyukanskaya Yuzhnaya 1 wildcat makes it three out of three for BP/Rosneft on its offshore Kaygan-Vasyukanskiy block (Sakhalin-5 project), an area that was opened by the Pela Lache find in 2004. Rosneft estimates reserves for the structure at 110 MMb.

Uzbekistan – The Yumay 1 wildcat drilled by Uzbekneftegas proved to be a modest oil discovery in the gas-prone basin Amu-Darya Basin. The well flowed 264 bo/d through a 3.5mm choke from the Callovian-Oxfordian carbonates.

Europe

Norway – Statoil encountered gas in several Late Triassic Sandstones in its 7122/6-2 (Tornerose) well. Although not tested, the discovery is to be evaluated as part of the resource base for a potential expansion of the LNG plant at Melkøya. Further development of the LNG plant, however, would require more gas than Tornerose could potentially supply.

This result is seen as giving a boost for Barents Sea exploration plans.

United Kingdom – ConocoPhillips well 30/6-6 (and 6z) on the Shoei prospect confirmed the presence of a substantial commercial hydrocarbon accumulation. Partner BG Group reported that the estimated recoverable reserves are between 100 and 275 MMboe, making this one of the largest North Sea finds in recent years.

It is on first round acreage that has been held under license for over 40 years.

Far East

China – Located in 1,480 meters of water in the South China Sea, Husky’s Liwan 3-1 1 in the PSCA 29/26 license is

continued on next page

continued from previous page

a significant gas discovery, as it is the first true deepwater discovery and it has possibly identified a structure with potential reserves of 6 Tcf.

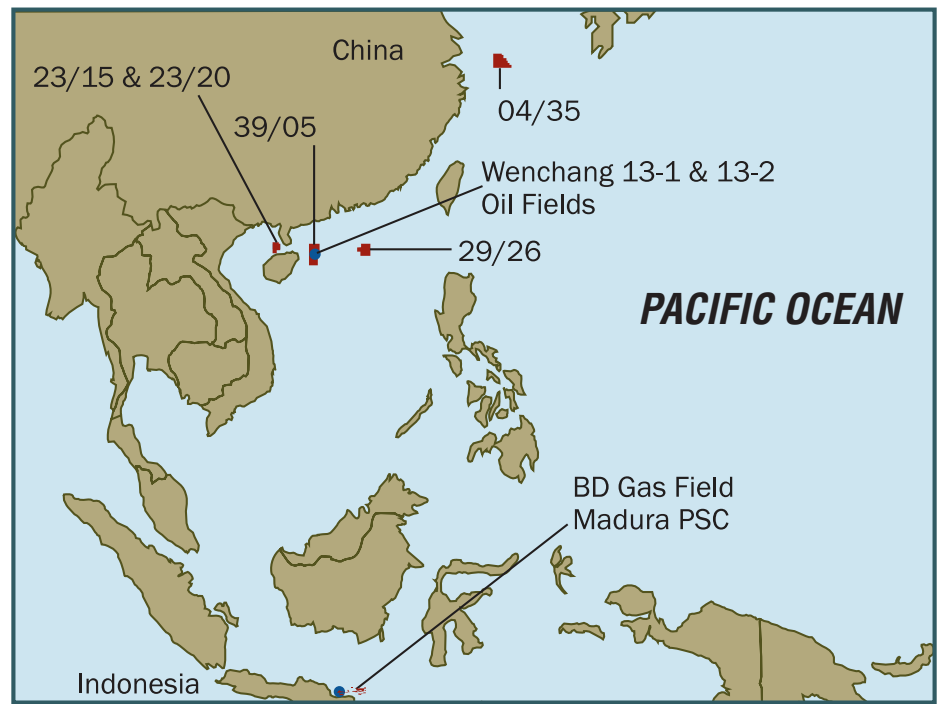
The well is located on the eastern end of the Zhu II Depression, seeking objectives in the Upper Oligocene Zhuhai Formation and Lower Miocene Zhujiang Formation. The well logged 56 meters of net gas pay in two zones, and extends the natural gas trend first revealed by Panyu 30-1 1 and Panyu 34-1 1 wells.

China – Sinopec Star's Yaoshen 1 wildcat is a good gas discovery well, a single drillstem test flowing 7.2 MMcfg/d from a deep volcanics reservoir between 3,540-3,750 meters in the Lower Cretaceous Yingcheng Formation. The discovery is estimated to hold roughly 1.1 Tcf of 2P gas in-place.

India – Drilled by Reliance, the D6-MA-1 (Dhirubhai 26) exploration well on the KG-DWN-98/3 (D6) (Krishna-Godavari Offshore) is located in 1,800 meters of water and is the first Cretaceous discovery to be made on the acreage. It is understood to have penetrated 26 meters of net oil pay and 72 meters of net gas pay; the oil horizon tested at an equipment-restricted flow rate of over 6,700 bo/d and 10.96 MMcf/d through a 64/64-inch choke, while the upper gas horizon flowed over 32 MMcf/d and 3,370 bc/d through a 80/64-inch choke.

The well is believed to have opened a significant new play and could have a material impact on the future exploration potential of the block.

Malaysia – In the PC4 1 well, located in the north of the open SK-310A permit, Petronas intersected a 630-meter gas column, a record for Sarawak.



Graphic courtesy of Husky Energy

Husky's Liwan 3-1 1 gas discovery (29/26), located in 1,480 meters of water in the South China Sea, possibly identified a structure with potential reserves of 6 Tcf.

Latin America

Brazil – Petrobras suspended 4-ESS-164A (4-BRSA-406A-ESS), a well that may be regarded as its best discovery in 2006; the company reports it had discovered 280 MMboe of 38° API oil. It lies in 871 meters of water and was targeting Cretaceous turbidites.

Brazil – The Petrobras 1-RJS-628A (1-BRSA-369A-RJS) oil and gas discovery tested 4,900 bo/d 30° API and 5.3 MMcfg/d through a 40/64-inch choke.

This well potentially could have discovered a field greater than 1 Bboe, and if proved would represent a supergiant field in a totally new geological province in Brazil. It would certainly represent the most important discovery in Brazil since Roncador in 1996.

Colombia – Canadian explorer Pacific Stratus Ventures plans early production of its La Creciente 1 (LC-1) as a gas discovery on the La Creciente Block in the Lower Magdalena Basin. In the primary Cienaga de Oro Formation objective the company flowed 29.1 MMcfg/d through a 32/64-inch choke, saying the well has the potential to yield up to 71.8 MMcfg/d

Mexico – The Noxal 1 wildcat, drilled by Pemex in the Catemaco Fold Belt offshore, is claimed as Mexico's first gas discovery in its deep waters of the Gulf of Mexico. A test in the interval 2,137 to 2,147 meters in the Lower Pliocene flowed 9.5 MMcf/d of high porosity gas. Reserve estimates are placed at 245 Bcf in this previously considered oil-prone sector of the Gulf of Mexico.

This likely new producing region, to be known as Coatzacoalcos Profundo (Deepwater Coatzacoalcos), might hold as much as 10 billion barrels of oil and gas equivalent.

Peru – Repsol-YPF's Raya 1-X oil discovery on Block 39 in the Maranon Basin only flowed around 2,000 bo/d from two intervals, but it may tip the balance in favor of developing a series of discoveries in a heavy oil trend.

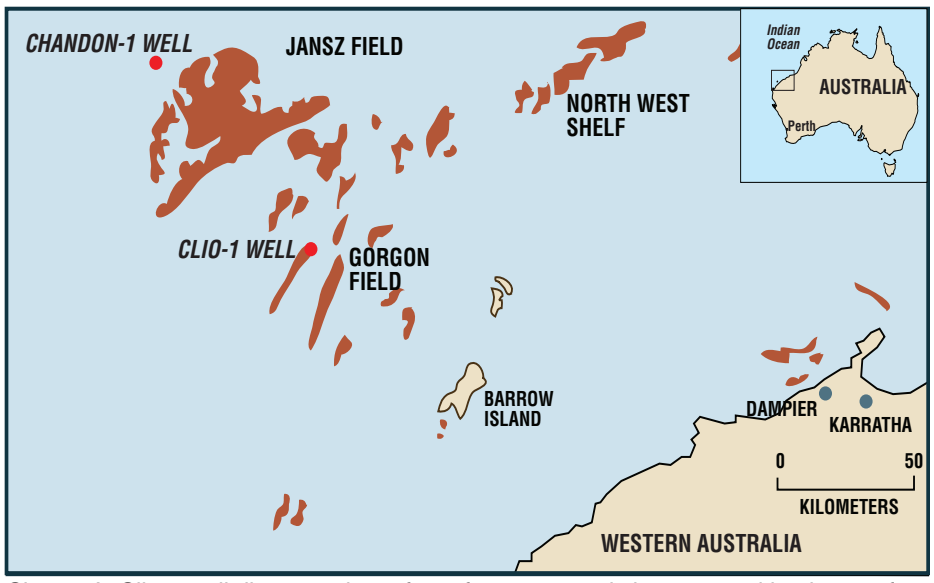
Trinidad & Tobago – BHP-Billiton's Kingbird 1 apparently penetrated a number of thrust faults resulting in repeats of the Lower Miocene and Oligocene section without reaching the top of Cretaceous. The well encountered hydrocarbon bearing Oligocene Angostura sands and approximately 24 meters of gross hydrocarbon pay.

The subsequent Ruby 1 well was even more significant, establishing 366 meters of gross hydrocarbon bearing sands, including more than 244m of net pay. The well tested at a rate of approximately 5,000 bo/d on a 7/8-inch choke.

Middle East

Iran – NIOC's Kish 2 gas discovery is ranked a supergiant find with reserves of

See **Discoveries**, page 18



Chevron's Clio-1 well discovered 623 feet of net gas sands in 2006, making it one of Australia's top wells in terms of total net pay.

'Mighty Mungaroo' Pays Off

Aussie Geologists Look to the West

By LOUISE S. DURHAM
EXPLORER Correspondent

Western Australia has received increasing attention lately as the place to be if you're looking for big hydrocarbon finds.

A look at the reserves numbers says it all.

The state is the major oil and gas producer in Australia, with 2004 reserves tallying 135 gigalitres of oil, 282 gigalitres of condensate and 3,408 cubic gigametres of gas, according to the Western Australia Department of Industry and Resources.

Petroleum prospectivity has been demonstrated both onshore and offshore Western Australia, and a non-threatening political climate further enhances the region's appeal for the prospectors and operators.

The lure of the area increased significantly with the recent announcement of Chevron's successful Clio-1 well, which was completed in September 2006 offshore northwestern Australia in Permit WA-205-P.

The well discovered 623 feet of net gas sands, making it one of the top wells in Australia in terms of total net pay, according to Chevron.

Transocean's semi-submersible rig Jack Bates was used to drill the well in approximately 3,000 feet of water; total vertical drilling depth was 15,500 feet.

Chevron Australia and Texaco Australia Pty Ltd operate permit WA-205-P and hold a 67 percent interest. Shell Development Australia holds the remaining 33 percent.

The pay zone in the Clio-1 is the Triassic Mungaroo formation, which AAPG member Peter Baillie, chief geologist Asia Pacific at TGS-NOPEC, labels "Mighty Mungaroo." He noted the fluvial sandstone can have multi-darcy porosity at four kilometers of depth.

The Clio-1 is in the region of the giant multi-field Greater Gorgon complex, and its successful completion came on the heels of another Chevron deepwater gas find made by the Chandon-1 well, which was announced in July. The Chandon-1 was drilled by the Jack Bates in 3,900 feet of water, with total drilling depth reaching 10,200 feet.

The well is about 160 miles offshore northwestern Australia, within reach of the Greater Gorgon development area. Chevron has a 100 percent interest in the Chandon-1.

Follow-Up Flurry

Look for a flurry of follow-up activity related to the Clio-1 discovery.

"We are undertaking further work on the discovery – including a 40-day, 463-square-mile (1,200-square-kilometer) 3-D seismic survey starting mid-December," said Scott Walker, media adviser at Chevron Australia, "to better determine the potential of the gas find and its subsequent development."

The Gorgon complex is unique in having a high CO_2 content, but indications are the gas deposit tapped by the Clio-1 is low in CO_2, according to Walker.

The potential is great for any number of follow-up discoveries by the company.

Walker noted Chevron Australia is among the largest holders of gas in Australia, (about 25 percent of the

See **Australia**, page 18

Discoveries

from page 15

36 Tcf, and one of the most important gas discoveries in the world in recent years.

The Triassic Kangan Formation tested 31 MMcfg/d; the underlying Permian Upper Dalan tested at 30 MMcfg/d; with the Nar Member flowing at 14 MMcfg/d, all using the same 5/8-inch choke.

Iraq – DNO's Tawke 1 in the Kurdistan region was suspended after the well yielded a maximum flow of 5,000 bo/d from one shallow reservoir estimated to be up to 800 meters thick, at a depth of 350 meters. DNO had estimated oil reserves in the Tawke structure at 330 MMb in place with 100 MMb recoverable, figures that may increase given the successful appraisal.

The well is regarded as the country's first significant oil find since 1993.

Saudi Arabia – Saudi Aramco's Karan 6 deeper pool wildcat tested gas at a rate of 40 MMcf/d, and is claimed as the Kingdom's largest gas discovery with reserves of 10 Tcf. The well was the first in an 11-well deep gas exploration program, and through 2006 was followed by gas finds at Nujayman, Kassab and Zamlah.

Frontier North America

Gulf of Mexico – The deepwater Jack discovery drilled by Chevron in 2005 was tested in 2006, and this provided confirmation with regard to the commerciality of the emerging Lower Tertiary trend. The significant discovery on this trend in 2006 was BP's Kiskida well, located in 1,791 meters of water, this encountered 244 meters of net Lower Tertiary pay; the two wells are 130 kilometers apart.

Saharan Africa

Algeria – Repsol's Kahlouche 2 (KL-2) wildcat in Blocks 351c/352c, Reggane Nord permit, Timimoun Basin is a significant discovery because it opens up a new trend by testing gas in the Carboniferous section for the first time in this basin. The well flowed an aggregate of 44.0 MMcf/d from two intervals.

DST 1 tested 26.95 MMcf/d through a 32/64-inch choke in a Sieganian section below 3,983 meters. DST 2 tested 17.06 MMcf/d, through a 32/64-inch choke in the Turnaisian below 2,360 meters.

Egypt – Apache successfully tested a new Jurassic play with its Kahraman B-22 well in the Khalda Concession. The well appraised the westward extent of the shallow Kahraman "B" Bahariya oil field and investigated deeper traps in the Alam el Bueib and Jurassic Safa formations. It logged a total of 25.6 meters of net pay in Jurassic sands between 3,773 and 3,916 meters. The Lower Safa tested at an average rate of 16 MMcfg/d and 486 bc/d on a two-inch choke.

New wells are planned in the Shushan "C" concession to investigate the possible extension of this Jurassic play, as Apache believes both sand quality and pay may improve to the north.

Sub-Saharan Africa

Cameroon – Total's Dissoni Marine 2 appraisal well in its Dissoni Block, Rio del Rey Basin, shallow offshore intersected around 50 meters of oil pay in a massive oil bearing sandstone in the Alternances Formation.

This successful appraisal of a 2000 discovery may signal the start of a new offshore development, the first in a number of years.

Nigeria – Shell's Bonga North 2X dual leg appraisal to the Bonga North 1X discovery in OPL 212 penetrated 90 meters of hydrocarbon-bearing sands in several intervals.

It is believed Shell is trying to prove up enough reserves (500 MMb+) that could lead to Bonga North being developed separately from Bonga.

Nigeria – Sao Tome JDZ. The first deepwater well in the JDA, Chevron's Obo 1 encountered a cumulative 45 meters of net hydrocarbon pay in multiple reservoirs. Reserves are rumored to be not as large as expected, leading to speculation that the well was not sited at the most prospective location but rather on the edges of a major structure to check its extent.

Uganda – 2006 hosted a run of discoveries that proved a significant step forward not only for Uganda but for East Africa in general.

Hardman's Mputa 1 wildcat was hailed as the country's first oil discovery; Waraga 1 (also Hardman) achieved an aggregated test rate of over 12,000 bo/d – an important incentive for future exploration of the Albertine Graben and other rift basin areas.

The Kingfisher 1 discovery drilled by Heritage confirms the trend. ❑

Australia

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country's undeveloped gas). As of 2006, the company had an operated interest in 15,000 square miles of acreage in Australia and a non-operator interest in approximately 10,400 square miles of acreage. Eighty percent of this is located offshore northwestern Australia.

The company's 2006 exploration budget in these interests tallied $190 million.

Chevron has partnered with Royal Dutch Shell and ExxonMobil in a proposed LNG facility to be built on Barrow Island in the Gorgon vicinity. Chevron will operate the installation and holds a 50 percent stake with the remainder allocated equally to the two partners. Currently, the LNG plant remains stalled in the approval process.

The sizeable quantities of CO_2 present in the gas produced from the Gorgan complex would be compressed and injected into a static aquifer on Barrow Island near the LNG facility. ❑

REGIONS AND SECTIONS

Students Share Secrets of Success

(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.

News items, press releases and other information should be submitted to the EXPLORER/Regions and Sections, P.O. Box 979, Tulsa, Okla. 74101.

Contact: Carol McGowen, AAPG's Regions and Sections manager, at 1-918-560-9403; or e-mail to cmcgowen@aapg.org.

McGowen provided this month's column.)

Dating back nearly 30 years, the AAPG Student Chapters Program began in 1979 as a six-school, three-year pilot program; the six were "oil patch" schools New Orleans, Oklahoma, Southern Methodist, Texas A&M and Texas Tech, and "non-oil patch" Maryland University.

From a beginning of six chapters and 250 total AAPG student members at the end of the first year, today there are over 130 student chapters worldwide with total AAPG student membership approaching 3,800.

One of the program's primary goals is to encourage students to think of themselves as professionals by providing contact with the geological profession both inside and outside of academia.

James A. Hartman, of Metairie, La., wrote in 1994 that the program's success "is a direct result of the combined hard work of the Student Chapters Committee, the students themselves, the faculty sponsors, the industry liaisons and the wholehearted support of the Executive Committee and headquarters staff."

On the rocks: Members of the University of Bucharest student chapter have reasons to smile – their chapter knows a thing or two about success.

But what would students who are currently members of AAPG student chapters give as essential factors for success?

We asked five chapters to share their stories, lessons learned and advice. Two provide answers here; next month, advice from students at Stephen F. Austin State University, Imperial College London and the University of Nigeria-Nsukka.

University of Texas-El Paso
(2006 AAPG Outstanding U.S. Chapter)

(El Paso, Texas, U.S.A.; student chapter formed in 1983; adviser – William C. Cornell, cornell@geo.utep.edu; current president – Shalina Warrior, swarrior@utep.edu; past president – Eva-Maria Rumpfhuber eva@geo.utep.edu.*)*

Describe the key factor essential to the success of your student chapter.

We not only have meetings and arrange fieldtrips on a regular basis, but also make ourselves known within the national AAPG organization; there is strong and consistent UTEP student presence at the student expos and national and regional AAPG meetings.

Many UTEP geology students ultimately seek industry jobs, and thus are interested in the AAPG organization. Our student chapter essentially brings the AAPG professional organization right into the university department, which allows the students to have direct involvement and benefit from AAPG membership.

What information do you know now that you wish you had known when starting your student chapter?

We recommend keeping everything regarding your student chapter in order and organized (e.g. applications, grant opportunities, member lists, etc.). This way you are saving yourself time, and you are able to pass along the information from one generation of officers to the next.

What has been the greatest challenge for your student chapter – and how have you overcome that challenge?

The biggest challenge is usually the organization of the annual trip to the AAPG/SEG student expo in Houston. Our presence at this event requires logistical planning, student participation and funding. AAPG and SEG student chapters usually organize this trip together, with the support of our

See **Student Chapters**, page 24

Perth Packed an International Punch

When Western Australian Premier Alan J. Carpenter told the large opening session audience in Perth that his state was "a geologist's paradise," he may not have realized just how perfect that statement would prove to be.

The 2006 AAPG International Conference and Exhibition, even though it was held at the "remote" venue of Perth, proved to be a record-setting meeting. With a final official count of 2,626 registrants, it became the largest international meeting in AAPG history.

From Carpenter's viewpoint, he used "paradise" to explain the region's huge exploration potential – and the huge potential for his state in working with the oil industry.

"It's (Western Australia) got tremendous potential, and the opportunity to discover totally new petroleum provinces," he said. "If we can't win the battle on exploration, we can't win the war on petroleum production, so we're putting in an effort to work with geologists to unlock the secrets of potential discoveries."

"Paradise" for meeting organizers referred to the large international crowd that flocked to the meeting. Although Australians accounted for the largest block of participants by country – 907 registrants – geologists from 65 countries attended the meeting.

Other countries with large numbers of attendees included the United States – 283; the United Kingdom – 100; Malaysia – 90; Indonesia – 76; and People's Republic of China – 67.

For more information on this subject, visit the AAPG Web site.

JANUARY — Gulf of Mexico

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1 New Year's Day	2	3	4	5	6
7	8	9	10	11	12	13
14	15 Martin Luther King Jr.'s Day	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

FEBRUARY — Offshore Indonesia

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1 North American Prospect Expo (NAPE) February 1-2 – Houston, TX	2	3
4	5	6	7	8	9	10
11	12 Lincoln's Birthday	13	14 Valentine's Day	15	16	17
18 Chinese New Year	19 Presidents' Day	20	21 Ash Wednesday	22 Washington's birthday	23	24
25	26	27	28			

MAY — Offshore Indonesia

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1	2	3	4	5
6	7	8	9	10	11	12
13 Mother's Day	14	15 Oil and Gas Uzbekistan – May 15-17 – Tashkent, Uzbekistan	16	17	18	19
20	21	22	23	24	25	26
27	28 Memorial Day	29	30	31		

JUNE — Natuna Sea

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1	2
3	4 Society of Petrophysicists and Well Log Analysts (SPWLA) – June 3-6 – Austin, TX	5 Caspian Oil and Gas Conference – June 5-8 – Baku, Azerbaijan	6	7	8	9
10	11 EAGE – June 11-14 – London, UK	12	13	14 Flag Day	15	16
17 Father's Day	18	19	20	21 Summer Begins	22	23
24	25	26	27	28	29	30

SEPTEMBER — West Africa

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1
2	3 Labor Day	4	5	6	7	8
9 AAPG Mid-continent Section Meeting September 9-11 – Wichita, Kansas	10	11 In Memory of 9/11	12	13 Rosh Hashanah	14	15
16 AAPG Eastern Section Meeting – September 16-18 Lexington, Kentucky	17	18	19	20	21	22 Yom Kippur
Autumn Begins 23	24 SEG – September 23-26 – San Antonio, TX	25	26	27	28	29
30						

OCTOBER — Offshore Indonesia

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	2	3	4	5	6 AAPG Rocky ...
7 AAPG Rocky Mountain Section Meeting – October 6-9 Snowbird, Utah	8 Columbus Day	9	10	11	12	13
14	15	16	17	18	19	20
21 Gulf Coast Association of Geologic Societies (GCAGS) October 21-23 – Corpus Christi, TX	22	23	24	25	26	27
28	29	30	31 Halloween			

MARCH — North Sea

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1	2	3
4	5	6	7	8	9	10
11 Daylight Saving Time Begins	12	13	14	15	16	17 St. Patrick's Day
18	19	20 AAPG Prospect and Property Expo (APPEX) March 20-22 – London, UK	Spring Begins 21	22	23	24
25	26	27	28	29	30	31

APRIL — Gulf of Mexico

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 Palm Sunday	2 AAPG 2007 – April 1-4 – Long Beach, California	3 Passover Begins	4	5	6 Good Friday	7
8	9	10	11	12	13	14
15	16 APPEA 2007 – April 15-18 Adelaide, Australia	17	18	19	20	21
22	23 AAPG SW Section Meeting – April 22-24 – Wichita Falls, TX	24 SEAPEX 2007 – April 24-27 – Singapore	25	26	27	28
29	30					

JULY — Gulf of Mexico

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3	4 Independence Day	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

AUGUST — Offshore Indonesia

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1	2	3	4
5	6	7	8	9	10	11
12	13 Rocky Mountain National Gas – August 13-15 – Denver, CO	14	15	16	17	18
19	20	21	22	23 Summer NAPE – August 23-24 – Houston, TX	24	25
26	27	28	29	30	31	

NOVEMBER — North Sea

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1	2	3
4 Daylight Saving Time Ends	5	6 Election Day	7	8	9	10
11 Veterans Day	12	13	14	15	16	17
18	19	20	21	22 Thanksgiving	23	24
25	26	27	28	29	30	

DECEMBER — West Africa

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1
2	3	4	5 Hanukkah	6	7 Pearl Harbor Day	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22 Winter Begins
23 30	24 31	25 Christmas	26	27	28	29

A Word of Thanks to Sponsors For Student Chapter Support

The growth and expansion of AAPG student chapters and activities worldwide would not be possible without the generous support of many individuals, businesses and private foundations, which has enabled geoscience students around the world to enhance their education and professional development by becoming AAPG members and participating in AAPG conferences, field trips and presentations.

With the beginning of a new year, we look back with sincere thanks and appreciation to the following major sponsors, listed in alphabetical order, who contributed to AAPG student activities during the past year:

AAPG Foundation
Anadarko Petroleum
BP
BP Developments Australia Pty Ltd.
Chevron
ConocoPhillips
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Devon Energy Corp.
ExxonMobil
Halliburton
Hardman Resources Ltd.
Nexen Petroleum U.S.A. Inc.
Occidental Petroleum Corp.
Pioneer Natural Resources
Schlumberger
Shell ❑

Student Chapters

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department. A lot of the "leg work" is done by the student chapter officers. We inform students of the event, encourage their participation, book travel and make sure the travel expenses are paid.

AAPG made travel grants available for this event in 2006. A few of our students received these awards, which helped to offset the cost.

Describe the most effective methods for increasing membership in your student chapter.

There is an amazingly easy recipe: If you want to attract students to come to meetings, simply provide food!

Advice or best practice to share with other student chapters.

Small efforts can sometimes have a big impact. Be creative and do not be afraid to ask if you want to pursue an idea. Our department at UTEP is extremely supportive of our AAPG student chapter activities. However, we also are never afraid to ask if we need something.

The same thing is true for the national AAPG organization, which is wonderfully represented by Mike Mlynek at AAPG headquarters, who is always promptly answering our questions and providing us with tips and new ideas.

University of Bucharest

(Bucharest, Romania; student chapter formed in 2000; adviser – Ovidiu N. Dragasta, ovidiud@ns.geo.edu.ro; current president – Enea Florentina, flori_enea2008@yahoo.com; past president – Cezar Iacob, ic10@yahoo.com.)

Describe the key factor essential to the success of your student chaper.

A good leader, who is the person to pull people together, to maintain an active relationship with the faculty and the AAPG, to lead and supervise the activity of the chapter.

What information do you know now that you wish you had known when starting your student chapter?

Knowing how to benefit from the various opportunities that AAPG offers to students.

What has been the greatest challenge for your student chapter – and how have you overcome that challenge?

Our greatest challenge was to create a real team from a group of students with different characters and social conditions. We created a team by involving our members in all kinds of non-formal activities, such as group projects or field camps.

Describe the most effective methods for increasing membership in your student chapter.

By distribution of promotional materials, creating a Web site and offering interesting presentations.

Describe the activity or event hosted by your student chapter that attracts the largest attendance.

Once every three years our chapter organizes the National Conference of the Romanian Student Geologists. The most successful edition was three years ago, when more then 200 students from all over the country participated.

This year the event will be hosted again by us, so we're in continuous preparations.

Advice or best practice to share with other student chapters.

Transform your chapter from a group of students into a group of friends, choose a good leader, and we guarantee you a successful chapter! ❑

Student Grant Deadline Looms

The 2007 AAPG Foundation Grants-in-Aid Program is available to current geoscience graduate students (masters or Ph.D.) whose thesis research has application to the search for/and or development of petroleum and energy-mineral resources, and to related environmental geology issues.

Additional details are available on the Foundation Web site at http://foundation.aapg.org/gia/index.cfm.

The deadline to apply is Jan. 31.

WashingtonWATCH

Elections Redefining the Agendas

By DON JUCKETT
GEO-DC Director

Anticipate that both the majority and minority parties will be focused on the next national elections in less than two years.

The mid-term elections are over and the American people have spoken. The next two months will be informative in terms of the climate of the remaining two years of this presidential tenure.

While it will take the new Congressional majority some time to get itself organized and fully establish its agenda, there are clearly several issues that will dominate the waning days of the 109th Congress and the beginning of the 110th Congress.

Foremost among the items to be handled during the lame duck session will be the budgets of several federal agencies that have operated under a continuing resolution since October 2006; only two departments, Defense and Homeland Security, have budgets passed by Congress and signed by the president.

(All other agencies continue to operate under the continuing resolution that was to expire on Dec. 8.)

By the time that this column is in print, the budget will have progressed into yet another continuing resolution or an omnibus spending bill that incorporates the nine remaining 2007 budget bills that appropriate for the remainder of the agencies. The alternative is shutting down the federal government.

* * *

It is a good time to take a quick look at the key changes in House and Senate leadership and potential impacts in AAPG's interest areas, as well as a brief synopsis of what might be forthcoming as the agenda for the 110th Congress.

The agenda likely will include tax reform, environment and climate change, the budget deficit and free trade, all of which could impact AAPG members at one level or another. In addition, the war in Iraq, Social Security, immigration law reform and the war on terrorism will rank high on the 110th Congress' agenda.

Action on major legislative items will, if experience holds, take some time to organize and begin moving through the House and the Senate. Look for a number of freshman congressmen and one or more of the new senators to promote issues that may not be either part of the leadership agenda or expected by leadership.

While those issues are difficult to predict, they invariably arise. No matter the outcome of non-agenda issues, they do serve as a distraction in the process and tend to derail schedules.

Anticipate that both the majority and minority parties will be focused on the next national elections in less than two years. Historically, that generally portends that dramatic and far-reaching legislative or policy change will be examined for its impact on the election cycle in that environment, landmark legislation is rarely enacted.

AAPG's status as a newcomer to the Washington arena, as well as its recognized reputation as a scientific professional organization, will permit members to continue to serve as sources of information in areas related to petroleum geoscience.

One early opportunity will be in the form of Congressional Visits Days in early May, where AAPG will be a sponsor and will provide an opportunity for leadership to meet with their elected representatives and committee staff and become better informed on the process.

* * *

Following are some of the leadership changes and a short assessment of their historical positions.

✓ In the Senate, Robert Byrd (D-W.Va.) will take the helm of the Appropriations Committee. The longest serving member of the Senate, Byrd will take charge of Appropriations for the third time. He has been a supporter of energy technology, particularly for coal.

✓ Sen. Jeff Bingaman (D-N.M.) will become the chairman of Energy and Natural Resources Committee. Bingaman, one of the lead authors of the 2005 energy bill, wants to expand nuclear power, promote "clean coal" research and toughen automobile emissions standards.

✓ Sen. Barbara Boxer (D-Calif.) will head the Environment and Public Works Committee. Boxer is expected to bring big changes to the Environment and Public Works Committee; she is one of the leading opponents of drilling in the Arctic National Wildlife Refuge, and has pushed for tighter drinking water standards and for lower toxic emissions

continued on next page

Summer Confab On Reserves, Resources Set In Washington

A high-level Multidisciplinary Reserves Conference is being planned this summer in Washington, D.C., focused on critical matters of reserve estimates and reporting.

AAPG is co-sponsoring the event, in cooperation with the Society of Petroleum Engineers, the Society of Petroleum Evaluation Engineers, the World Petroleum Congress and the United Nations.

"Petroleum reserve and resource estimates are a critical part of the language used to communicate energy information to policy makers, regulators, the financial and investment community and the consuming public," said AAPG GEO-DC Director Don Juckett, chief staff liaison for the conference. "This conference will serve as an important step in the process of developing global acceptance of a set of universal standards for reserve and resource reporting."

The conference's purpose, Juckett said, is to engage the users of reserves and resources data – corporate management, accounting, banking, investors and government – in active discussions with technical professionals who define and generate these estimates (petroleum engineers and geoscientists), with the goal of better understanding their nature, reliability, universality and use.

Juckett noted that participation in the conference, to be held June 24-26, is by invitation. ❑

continued from previous page

standards for power plants.

Boxer plans to address global warming issues.

✓ Among the Republican minority leadership, two Texas senators, Kay Bailey Hutchison and John Cornyn, as well as Trent Lott (Miss.) and Mitch McConnell (Ky.), historically have been energy friendly.

✓ In the House, Congressman David Obey (D-Wis.) will head the Appropriations Committee. Obey chaired the Appropriations Committee before the 1994 Republican takeover. He has actively tried to limit the executive branch's power to spend without first consulting congressional leaders.

✓ Congressman John Dingell (D-Mich.) will assume leadership of the Energy and Commerce Committee. Dingell has served in the House for over 50 years and chaired the committee for 14 years.

Dingell helped craft the compromise that led to the 1990 Clean Air Act. He is generally seen as an advocate for the auto industry and consequently serves as a rational voice in most energy related matters.

Washington Watch columns will incorporate updates as the key committees begin to take shape.

(Editor's note: Don Juckett, head of AAPG's Geoscience and Energy Office in Washington, D.C., can be contacted at djuckett@aapg.org, (703) 575-8293.) ❑

PROFESSIONAL NEWS BRIEFS

James K. Bass, to chief operating officer, Sheridan Production Partners, Houston. Previously senior vice president, El Paso Exploration & Production, Houston.

Ali Beken, to senior analyst-engineering, Ross Smith Energy Group, Calgary, Canada. Previously specialist-adviser, Alberta Energy Utilities Board, Calgary, Canada.

Steven M. Carlson, to chief technical officer, GeoPatterns Technology, Houston. Previously senior geophysical adviser, Occidental Petroleum, Houston.

Steven Crews, to manager-petroleum systems, Hess Corp., Houston. Previously basin modeling team leader, Anadarko Petroleum, The Woodlands, Texas.

John Decker, to general manager, Black Gold Energy, Jakarta, Indonesia. Previously regional geologist, Chevron, Jakarta, Indonesia.

Michael T. Gibson, to senior geophysicist, Mariner Energy, Houston. Previously geophysicist, Newfield Exploration, Houston.

Stephen "Steve" Hamm, to senior geologist, Seven Energy, Houston. Previously geoscience project manager, Sovereign Oil and Gas, Houston.

Sam Harvey, to staff geologist, Pennsylvania General Energy, Warren, Pa. Previously geologist, Chevron Corp., New Orleans.

Ronald Manz, to vice president-exploration, Nexen Petroleum, Dallas. Previously exploration manager-Gulf of Mexico, Shell Exploration and Production, Houston.

Einar Pedersen Jr., to regional manager, Cheyenne Petroleum, Dallas. Previously geologic manager, Continental Resources, Enid, Okla.

Andrew A. Peloso, to chief operating officer, GeoPatterns Technology, Houston. Previously product manager, Paradigm Geophysical, Houston.

Jeannine A. Perrot, to senior geologist-Gulf of Mexico oil asset team, Marathon Oil, Houston. Previously senior geologist/trainer, Seismic Micro-Technology, Houston.

Yusak H. Setiawan, to senior geophysicist, Hess Oil & Gas, Kuala Lumpur, Malaysia. Previously advising geophysicist, Chevron, Houston.

John Smale, to senior regional exploration geologist, Shell International E&P, Rijswijk, Netherlands. Previously staff exploration geologist, Shell International E&P, Houston.

Donis G. Snellenberger, to senior exploration geophysicist, Goldking Energy, Houston. Previously senior staff geophysicist, El Paso Production, Houston.

Rich Snyder, to senior geologist, Chesapeake Appalachia, Charleston, W.Va. Previously senior geologist, Continental Illinois, Mt. Vernon, Ill.

Fielding Turlington, to senior exploration geophysicist, Hunt International, Woking, England. Previously senior geophysicist, Gulf of Suez Petroleum, Cairo, Egypt.

Clay Wilcox, to associate geologist, eastern division, Chesapeake Energy, Charleston, W.Va. Previously associate geologist, Chesapeake Energy, Oklahoma City.

(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.)

GEOPHYSICAL CORNER

Footprints in Seismic Data

(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 titled "Footprints in Seismic Data.")

By SURINDER SAHAI
and KHALID SOOFI

The term "acquisition footprint" is often used to describe amplitude stripes that appear in time slices or horizon slices produced from 3-D seismic data volumes. Although acquisition design of a 3-D survey has a major influence on the nature and severity of a footprint, improper data processing techniques – such as the use of incorrect normal moveout (NMO) velocities – can also create footprints.

This article discusses the effect of survey design on footprints and illustrates what can be done to mitigate footprint effects at the interpretation stage.

* * *

Figure 1a is a time slice extracted from an onshore 3-D seismic volume. The data were acquired with an orthogonal survey design in which source lines were orthogonal to receiver lines, and they show a severe footprint oriented in the east-west direction as alternating weak and strong amplitude stripes. These amplitude stripes are related to acquisition geometry, not to geology.

In this case it is easy to surmise that the footprint tends to mimic the acquisition design. In other cases, a footprint pattern can be unpredictable in real data.

Zig-zag geometry is another common 3-D seismic survey design used across onshore prospects. In this design, receiver lines are oriented parallel to each other, and the source moves in a zig-zag pattern between adjacent pairs of receiver lines. If each source line is a mirror image of the previous source line, a zig-zag pattern is formed.

Figure 1b is a time slice of data acquired with a mirror zig-zag pattern across an area adjacent to the orthogonal survey displayed in Figure 1a. One feature of this latter image is the absence of an obvious footprint. These examples illustrate that survey design influences the presence or absence of acquisition footprints in seismic data.

Any data-acquisition or data-processing technique that causes the stacking fold across a given time slice to vary between bins will produce a footprint.

✓ In the shallow part of a seismic section, only small-offset traces contribute to a stack. Therefore, the shallow part of seismic image space is more susceptible to footprint problems because the number of small-offset traces almost always differs from bin to bin because of the acquisition geometry.

✓ In the section's deeper part, the fold-of-stack is equivalent to the maximum bin fold and tends to be reasonably uniform from bin to bin.

Although it makes intuitive sense that the footprint will be more pronounced in seismic time slices from a shallower depth than from a deeper depth, the reality is that the footprint is unpredictable.

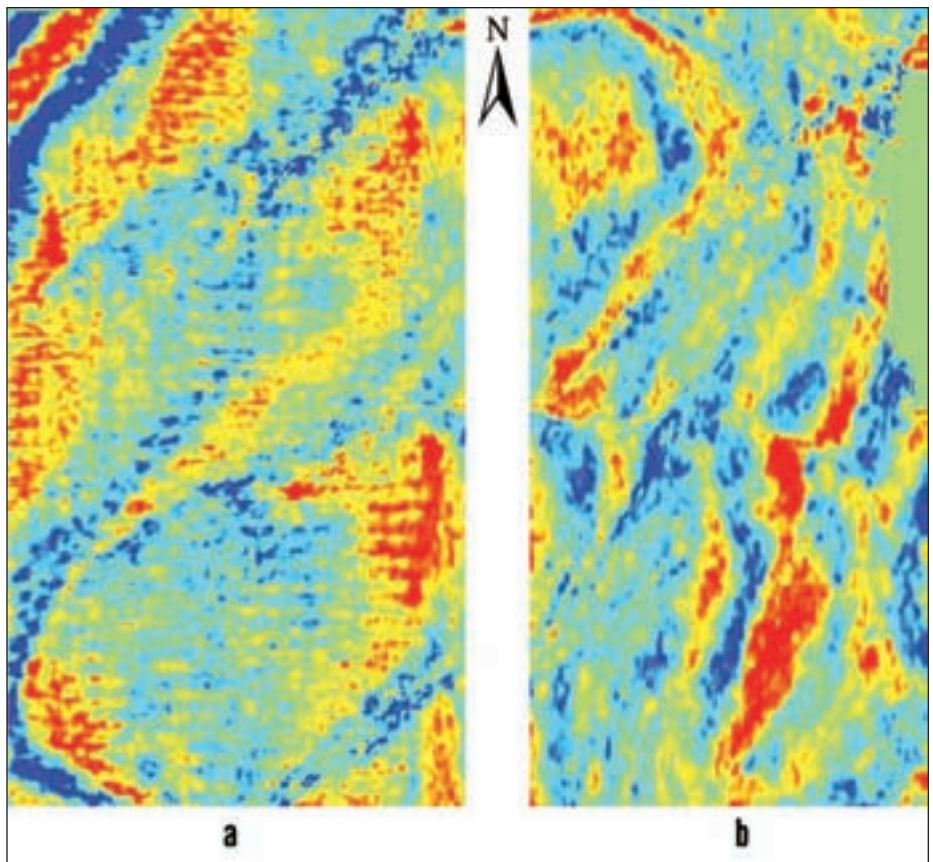

Figure 1 – (a) Time slice at 1020 msec extracted from 3-D seismic data acquired with an orthogonal survey design has an acquisition footprint that appears as west-to-east amplitude stripes; (b) time slice at 1020 msec from 3-D data acquired across nearby geology with a mirrored zig-zag survey design does not have a noticeable footprint.

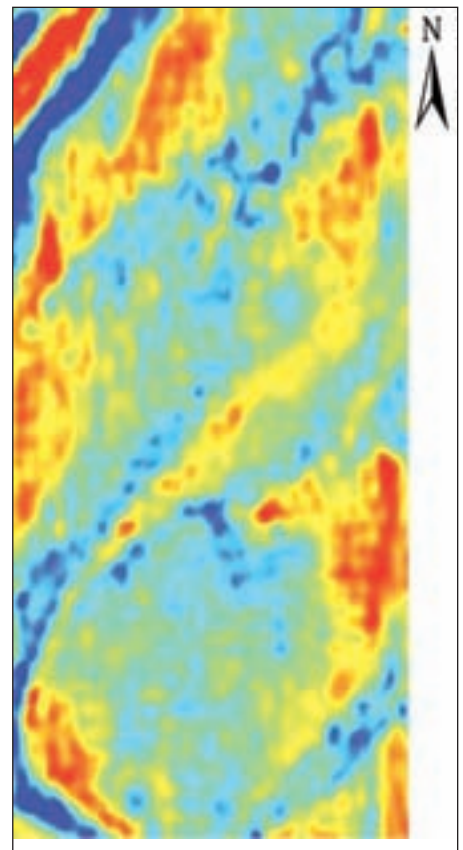

Figure 3 – Filtered version of time slice at 1020 msec has a much-reduced footprint in comparison to figure 1a, and allows better interpretation of an imaged channel system.

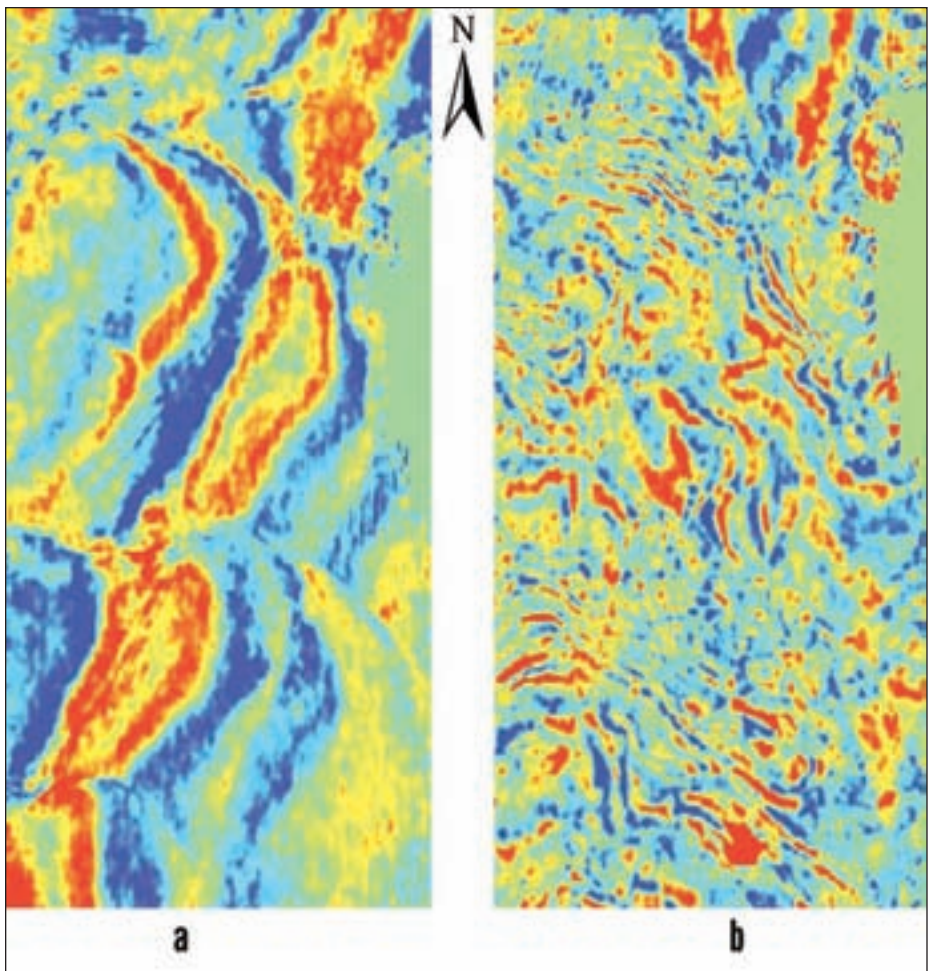

Figure 2 – (a) Time slice at 1200 msec for the mirrored zig-zag survey design has north-south amplitude stripes in the data; (b) time slice at 1550 msec for the mirrored zig-zag design does not show a footprint.

A comparison of figure 2 with figure 1b illustrates this point: For the mirrored zig-zag survey design, the footprint is hardly noticeable in the time slice at 1020 msec (figure 1b). However, a time slice at 1200 msec (figure 2a) has a footprint that appears as north-south vertical striping; whereas, a time slice at 1550 msec (figure 2b) does not show a footprint.

In this data volume, a footprint is absent at a shallower depth (figure 1b), then appears at a deeper depth (figure 2a), and then disappears again at yet a deeper depth (figure 2b).

* * *

Other factors can modify an acquisition footprint or create additional footprints. Despite our best efforts to design 3-D surveys to minimize bin-to-bin fold and offset variations, footprints in seismic data cannot be completely eliminated before a final stacked 3-D volume is given to an interpreter.

In many cases, such as the example in figure 2a, an interpreter can look past the footprints and do a good job of inferring the geology. In other instances, the footprint may be so severe that it masks important information about the geology.

In figure 1a, for example, the presence of a channel in the image's northeast corner is completely masked by the footprint. A properly designed filter applied in the frequency-wave number domain can reduce the vertical and horizontal stripes in the time slice and make it easier to see the channel (figure 3).

Some interpretation workstations provide the capability to design and apply such filters to data during an interpretation phase.

* * *

In summary, we should attempt to minimize footprints by employing proper seismic acquisition and processing techniques – but if a footprint persists in the stacked data, there are ways to filter the data and mitigate its effect on geological interpretation.

(Editor's note: Surinder Sahai is an associate professor at Oklahoma State University; Khalid Soofi is a senior research fellow at ConocoPhillips, Houston.) ❑

Gifts Made to Help Students

Three new gifts have been made to benefit geoscience students through the AAPG Foundation's Digital Products University Alumni Fund.

The Alumni program, a special endowed segment of the AAPG Foundation Digital Products Fund, provides a subscription fee for students at a specific school to have uninterrupted access to the entire AAPG Digital Library – over 500,000 pages of international, national and regional libraries of petroleum and geology and geophyics information.

The gifts provide endowments for:

✓ Tulane University, provided by Freeport-McMoRan, in memory of the late Kent McWilliams.

✓ Princeton University, provided by Lawrence W. Funkhouser, AAPG Foundation Trustee Emeritus, in memory of Hollis Hedberg.

✓ Oberlin College, also provided by Funkhouser.

Funkhouser also provided the gift for the Lawrence W. Funkhouser Named Grant, which provides an annual $1,000 Grant-in-Aid for a student at Stanford University.

In other Foundation news, the AAPG Eastern Section has provided funding for an annual $500 Grant-in-Aid to be awarded to a graduate student studying petroleum geology in the AAPG Eastern Section Region. ❑

FOUNDATION UPDATE

Foundation (General)

Victor F. Agbe-Davies
Abdulla Abdulaziz Al-Naim
Claude B. Anger
William Bartling
Richard Edward Bischke
Kenneth Nye Black
David Gerald Bryant
In memory of Robey Clark
James Michael Casey
Ram Niwas Choudhary
Alexander Lee Claypool
Arthur L. Cochrum
Michael John Coley
Marline R. Collins
Robert D. Cowdery
In memory of Earl Griffith
Helen V. Curiel-Mitchell
William L. Fisher
In memory of Marcus Milling, Robey Clark and Bob Berg
Katherine Anne Giles
Paul Michael Guerino
Geoffrey Haddad
C. James Harden
Jonas Edwin Harrell
Eric Henry Johnson
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In memory of Joseph Jones
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Awards Fund

Victor F. Agbe-Davies

Best Student Paper and Poster Award
Abel Chacon

A.I. Levorsen Memorial Award
Rande L. Gardiner

Digital Products Fund
Kansas State University
Matthew W. Totten

Tulane University
Freeport-McMoRan Foundation
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University of Miami
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Grants-in-Aid Fund
Mavatikua Lubanzadio

Gustavus E. Archie Memorial Grant
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In honor of Tony Corrigan and Lindsay Kaye

Gustavus E. Archie Memorial International Grant
Anonymous AAPG Member
In honor of Tony Corrigan and Lindsay Kaye

Herbert G. Davis and Shirley A. Davis Named Grant
Herbert G. Davis
In honor of John and Camille Amoruso; in memory of August Goldstein Jr.

Eastern Section Named Grant
Eastern Section-AAPG

Robert K. Goldhammer Memorial Grant
Richard Edward Bischke

Raymond C. Moore Memorial Grant
Tomas Villamil

Ohio Geological Society Named Grant
Jacob Michael Glascock

Donald A. and Mary O'Nesky Named Grant
Donald A. O'Nesky
In memory of Marcus Milling and August Goldstein Jr.

K-12 Fund
Kevin C. Foster

SPOTLIGHT ON EDUCATION

The start of a new year is always a good time to make good on those resolutions to get the training credits you need to maintain or upgrade your technical skills and career opportunities – and AAPG can help you meet your goals through its education program.

For example:

✓ The time is here to register for the Winter Education Conference, set Feb. 12-16 in Houston.

Twelve courses will be offered over the five days – and if you can't attend the entire week you can share your badge with a co-worker to take advantage of the discount rate!

You can find all the course descriptions and download a registration form from the AAPG Web site at www.aapg.org/education/wec.cfm.

✓ On March 12-13 we offer a brand new course on "Integrated Petrography and Geochemistry of Carbonate Rocks," taught by industry experts Peter and Dana Scholle. This course will be held in Dallas, and participants will receive AAPG Memoir #77 as part of the course notes.

Details are at www.aapg.org/education /shortcourse/details.cfm?ID=104.

✓ Four courses will be offered in conjunction with the AAPG Annual Convention in Long Beach, Calif. They are:

Reservoir Engineering for Geologists, by Rich Green and William Kazmann, March 31-April 1.

Principles of Reservoir Characterization, by Jeffrey Yarus, March 31-April 1.

Quick Guide to Carbonate Well Log Analysis, by George Asquith, March 31.

Deep-Water Siliciclastic Reservoirs (field seminar), by Stephan Graham and Don Lowe, held in northern California locales April 5-10.

There are many other short courses and field seminars to choose from throughout the coming year, and all details are on the AAPG Web site at www.aapg.org/education/index.cfm.

(And there are also special discounts and programs for students and professors who attend; check out www.aapg.org /education/discounts.cfm. ❑

EMD Announces Candidates

The AAPG Energy Minerals Division has announced its officer candidates for 2007. They are:

President-Elect

❒ Michael D. Campbell, Campbell and Associates, Houston.

❒ Creties Jenkins, DeGolyer and MacNaughton, Dallas.

Vice President

❒ Arthur H. Johnson, Hydrate Energy International, Kenner, La.

❒ Larry M. Knox, Dominion Exploration & Production, Houston.

Treasurer

❒ Neil S. Fishman, U.S. Geological Survey, Denver.

❒ K. David Newell, Kansas Geological Survey, Lawrence, Kan.

Gulf Coast Section Councilor

❒ Michael A. Wiley, consultant, Canyon Lake, Texas.

Southwest Section Councilor

❒ Jeffrey R. Levine, consultant, Richardson, Texas.

Canadian Region Councilor

❒ Andrew P. Beaton, Alberta Geological Survey, Edmonton, Canada. ❑

IN MEMORY

David E. Powley, an Amoco geoscientist who was a pioneer and trailblazer in compartmentalization of pressure regimes in sedimentary provinces, 78, died Oct. 29 in Tulsa after a short illness. He was 78.

AAPG Datapages' GIS-UDRIL project is preparing the Dave Powley Compartment Database in his memory and in recognition of his contributions to the industry and AAPG.

* * *

Donald James Bailey, 74
Bastrop, Texas, Nov. 12, 2006
Kenneth Stanley Bishop, 80
Parker, Colo., Oct. 20, 2006
William Conrad Bradford (AC '63)
Oklahoma City
Carl Edward Carlson, 84
Chula Vista, Calif., Nov. 25, 2006
Richard Bryan Caughey, 77
Westfield, N.Y., April 23, 2006
Stanley Dickson Conrad, 93
Arvada, Colo., Nov. 4, 2006
John Campbell Craddock, 76
Madison, Wis., July 23, 2006
Earl Gordon Griffith, 87
Lakewood, Colo., Aug. 11, 2006
Charles M. Hartwell, 84
Midland, Texas, Aug. 28, 2006
Carl Monroe Hutson (AC '70)
Houston
Miscal John Norris, 86
Tulsa, July 26, 2006
Robert E. Osborne, 78
Baton Rouge, La., Oct. 24, 2006
David E. Powley, 78
Tulsa, Oct. 29, 2006
Tommie Joe Thompson, 75
Rockwall, Texas, May 30, 2005
Harold Duane Wellman, 80
Conroe, Texas, Sept. 21, 2006

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

NEW Short Course!!

Integrated Petrography and Geochemistry of Carbonate Rocks and Its Application to Reservoir Studies

Date: March 12-13, 2007
Location: Dallas, Texas
Tuition: $690, AAPG Members; $790, non-members (increases to $790/890 after 2/12/07); includes course notes, plus lunch and refreshments each day.
Content: 1.5 CEU
Instructors: Peter Scholle and Dana Ulmer Scholle, New Mexico Bureau of Geology and Mineral Resources, Socorro, New Mexico

Who Should Attend
Geologists and engineers interested in carbonate reservoir characterization, including understanding the depositional setting, diagenetic history, and origin and timing of porosity development or destruction in limestone and dolomite reservoirs.

Plan Now for Spring Education with AAPG!!

Courses at the AAPG Annual Convention

Reservoir Engineering for Petroleum Geologists

Date: March 31-April 1, 2007
Location: Long Beach, California, with AAPG Annual Meeting
Tuition: $690 (increases to $790 after 3/2/07); includes course notes and refreshments.
Content: 1.5 CEU
Instructors: Richard G. Green, William Kazmann, LaRoche Petroleum Consultants, Dallas, Texas

Who Should Attend
The course is designed for personnel who wish to acquire a broad understanding of the factors that influence the production of oil and gas from reservoirs. The course presents information that can be applied to geologists, geophysicists, petrophysicists, land management specialists, and managers with no previous training in reservoir engineering. It can also serve as an introductory course for engineers who have not had previous training in reservoir engineering.

Principles of Reservoir Characterization

Date: March 31-April 1, 2007
Location: Long Beach, California, with AAPG Annual Meeting
Tuition: $650 (increases to $750 after 3/2/07), includes course notes and refreshments
Content: 1.5 CEU
Instructor: Jeffrey Yarus, Quantitative Geosciences, Inc., Houston, Texas

Who Should Attend
The class is appropriate for geoscientists, engineers and modeling technicians who would like a better understanding of what's behind the sophisticated 3D reservoir modeling software they are using.

Quick Guide to Carbonate Well Log Analysis with Flow Chart, Case Studies and Problems

Date: March 31, 2007
Location: Long Beach, California, with AAPG Annual Meeting
Tuition: $500 (increases to $600 after 3/2/07), includes course notes and refreshments
Content: .7 CEU
Instructor: George B. Asquith, Texas Tech University, Lubbock, Texas

Who Should Attend
This is an advanced course in carbonate well logging designed for geologists, engineers and geophysicists who are interested in the detailed methods of carbonate log analysis. The course participant should come to the course with basic understanding of the principles of well logging and at least a few years of industry experience.

Deep-Water Siliciclastic Reservoirs, California

Leaders: Stephan Graham and Donald R. Lowe, Stanford University, Stanford, California
Dates: April 5-10, 2007, following the AAPG Annual Meeting
Location: Begins in Palo Alto and ends at the airport in San Francisco, California; Begins Thursday, 4/5, 5:00 p.m., and ends Tuesday mid-afternoon, 4/10.
Tuition: $2,675 (increases to $2,775 after 3/02/07), includes lodging, transportation during the seminar, lunches, guidebook and group dinner (1 night)
Limit: 20
Content: 5.5 CEU

Who Should Attend
Geologists, geophysicists, reservoir engineers, managers and anyone working with deep-water reservoir systems.

AAPG Geoscience Education

For further information, please contact the AAPG Education Department
Phone: 918-560-2650; Fax: 918-560-2678; e-mail: educate@aapg.org
Or log on to www.aapg.org/education/index.cfm

WHERE
The University of Oklahoma
School of Geology and Geophysics
Norman, Oklahoma

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- Networking Opportunities
- Scientific Poster Contest
- Energy Industry Company Exhibits
- Short Courses and Field Trip
- SEG Challenge Bowl

WHO
All Students in Geology and/or Geophysics Depts.

WHEN
March 15. 16. 17. 2007

RSVP
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AAPG & SEG MEMBERS REGISTER FREE

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

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

For Active Membership

California
Aburto, Ivan Alberto, BreitBurn Energy, Glendora (D.D. Clarke, J.G. Kuespert, D.E. Hoyt)

Colorado
Mitchell, Jessica Steffen, Pason Systems USA Corp., Golden (J.M. Barclay, J.R. Watson, W.R. Nagel); **Ward, Matthew John**, Cabot Oil and Gas, Denver (T. Taylor, J. Bauman-DuBois, J. Caldaro-Baird)

Illinois
Meighen, Penny L., Foundation Coal Co., Keensburg (D.E. Hattin, M. Mastalerz, J.C. Hower)

New Mexico
Wilcox, Robert Edward, Kleinfelder, Albuquerque (M.A. Jacobs, W.H. Murley, J.D. Yahr)

Nevada
Foster, Stephen Eric, retired-Unocal Corp., Reno (J.P. Walker, J.G. Price, S.H. Limerick)

New York
Smith, Langhorne B., New York State Museum, Albany (K.L. Avary, D.A. Billman, D.C. Harris)

Texas
Beckman, Douglas William, Anadarko Petroleum, Houston (B.J. Lindsey, M.J. Albertson, P.H. Jaeger); **Hartz, David M.**, Hess Corp., Houston (C.R. Noll Jr., F.V. Bifano, G.J. De Paul); **Lebit, Hermann D.**, consultant, Houston (B.E. Lock, M. Hartung, K. Follmi); **Michaelson, Eric L.**, Michaelson Producing, Midland (P.H. Pause, T.J. Hunt, J.W. Adams); **Rutter, Albert William III**, Rutter and Wilbanks, Midland (J.M. Party, W.R. Green, A.W. Rutter Jr.); **Stahn, Catherine Close**, Schlumberger Information Solutions, Houston (K.E. Nemeth, K.F. Adamson, J. Bauer); **Steinbis, Martin Theodore**, self-employed, Houston (reinstate); **Wells, Christina Alanna**, Swift Energy Operating, Houston (G.R. Lader, W.S. Williams, B.L. Milne-Andrews)

Virginia
Hickman, Josh Clayton, CNX Gas Co., Bluefield (M.G. McClure, T.M. Murin, J.B. Hickman)

Austria
Hinsch, Ralph, Rohoel-Aufsuchungs AG RAG, Vienna (H. Linzer, W. Nachtmann, C. Gaedicke)

Canada
Topolnyski, Nick, Longford Corp., Calgary (A. Embry, C. Gazzier, G. Levine)

India
Peters, James, Oil & Natural Gas Corp., Mumbai (reinstate)

Saudi Arabia
Billing, Ian Michael, Saudi Aramco, Dhahran (H.W. Mueller, R.F. Lindsay, S.G. Franks) ❑

Certification

The following are **candidates** for certification by the Division of Professional Affairs.

Petroleum Geologist

Pennsylvania
Billman, Dan Aret, Billman Geologic Consultants, Mars (P.M. Imbrogno, M.R. Canich, G.W. Hobbs)

Texas
Buekert, Thomas Peter, Hess Corp., Houston (G.J. Roche, D.M. Advocate, F.V. Bifano); **Walters, Robert Derek**, Ryder Scott Co., Houston (J. Hodgin, G. Presley, J. Broome)

United Kingdom
Gordon Robertson Taylor, RPS Energy, Woking (Geological Society of London)

Petroleum Geophysicist

Oklahoma
Vilbert, James Steven, Continental Resources, Enid (K. Ainsworth, E.N. Pedersen Jr., W.E. Diggs)

Looking for Balance

Committee to Study Climate 'Fact Sheet'

By LEE BILLINGSLEY
AAPG President

We've received questions from several of you about the proposed Global Climate Change Card.

To answer that, I'd like to first give some background: Three AAPG members on the Public Outreach Committee (Bill Pollard, Ray Thomasson and Lee Gerhard) prepared material for a Global Climate Change card. Their intent was to distribute the card to all AAPG members.

They first submitted draft material for the card at the AAPG Annual Convention in Calgary in June 2005. As committees and members reviewed the card, wide differences in opinion on the card's content emerged.

Last year's AAPG Executive Committee decided to display the card on AAPG's Web site and invite member comment. That period ended Oct. 1, but it provided an active forum on global climate change in general and the card in particular.

Based on member comments, AAPG will probably not reach a consensus on recommended policy options to reduce global climate change. However, we probably could reach a consensus on pertinent facts on the subject.

* * *

As this year's Executive Committee deliberated over the card's fate, we realized that it essentially represented AAPG's position on global climate change. Furthermore, not all position papers should contain directives on government or public policy. Some topics would be best written in the form of "Fact Sheets." Individual members could use Fact Sheets to enlighten fellow citizens, speak in public or convey information to government officials.

As individuals, members may choose to recommend policies to public officials.

Obviously, the topic of global climate change would be best as a Fact Sheet.

The EC decided to appoint a balanced committee to write AAPG's Fact Sheet on global climate change. Committee members will represent diverse views on the topic. A small, pocket-size card would provide a good medium for members to distribute.

Ultimately, the EC must approve of the Fact Sheet and card's contents, but this topic deserves another round of public comment by members on the Web site.

Our goal is to prepare a revised card for distribution before the end of the fiscal year.

I think the topic of global climate change is important to members, because we realize the need for scientific facts within public policy debate – and especially on this topic. AAPG can and should facilitate the distribution of those facts. It will be up to individual members to utilize the facts to shape public policy. ❑

Commentary

Climate Statement a Result of Study

By LEE GERHARD

AAPG has a climate change policy statement that is dramatically different from all other professional societies, so much so that others criticize AAPG for its differing stand.

Recent comments have questioned the process by which AAPG arrived at its position statement. AAPG put more research, member involvement and study into its policy development than any other group. AAPG's policy statement is science-based; others appear to be opinions.

First, the AAPG organized two public panel discussions of climate change at the 1996 and 1998 annual meetings – both extremely well attended. The panels provided presentations that both support and critique anthropogenic climate influence. The first panel consisted of Robert Watson, of the World Bank, in support of human influence, and Fred Singer, a noted and well-versed critic of the concept. I was the third member of the panel, and came down more on the critic side, based on climate history.

The 1998 panel, included Richard Lindzen and Michael McCracken, U.S. Climate Program, among others.

In 1997 AAPG Past President Bernold "Bruno" Hanson was asked to form a study group, the Ad Hoc Committee on Global Climate Change, which I co-chaired with him. Membership consisted of scientists who were asked to prepare reports about climate change in their areas of interest and specialty.

Over a year-long study period, a voluminous report was prepared and presented to the AAPG Executive Committee. In turn, the Executive Committee requested that the Government Affairs Committee prepare a position statement about climate change and the Kyoto Protocol, based on that study.

The Government Affairs Committee laboriously prepared a statement, after extended debate and discussion. The statement was forwarded to the Executive Committee for its review, modifications made by their request and the final statement was approved in October 1999.

Concurrently, two consecutive formal scientific sessions were held at national AAPG meetings.

✓ The first, organized by William Harrison in 1999, was an all-day session with prominent speakers from many points of view, but focused on the science of past climate drivers and their possible roles in current change.

✓ The second, an afternoon session held on Wednesday (the last day) of the 2000 annual meeting, drew a full crowd who stayed almost the entire afternoon. The papers were summary papers for the most part. They reported on scientific studies that evaluated past climate history in context of modern climate changes.

The AAPG book "Geological Perspectives of Global Climate Change" (2001) resulted from these sessions, as have several recent papers and responses in the AAPG BULLETIN. Members had multiple opportunities to comment or question.

No other society has given this issue comparable thought and study. I am proud of the way in which AAPG has conducted its business, as a true scientific society. Some have argued that geologists should not be in this debate. However, geologists own the study of past climates, and past climates are the rocks upon which the supertankers of computer models dealing with general circulation have foundered.

This is not a time to simply express opinions, it is a time to bring data to the table and address science. Our interest should be to defend the integrity of science in the face of contrary social agendas. If any readers are interested in my data, much of it is contained in a PowerPoint presentation that can be accessed at: http://ff.org/centers/csspp/docs/gerhardppt.ppt.

As new data are made available, my presentation changes to reflect that data. ❑

READERS' FORUM

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.

Wait and See

Matthew Totten's theory on ash deposits in the Gulf of Mexico is quite convincing (December EXPLORER).

The industry seems to be reluctant when confronted with brand new ideas like this one. This idea may be proving "tough to sell" at the moment, yet it has the potential of becoming one of the best things that ever happened to the petroleum industry.

Let's not forget in a hurry that, over a decade ago, Mitchell Energy Co. was considered by some of its competitors as a time waster in the Fort Worth Basin of Texas. Today his unconventional ideas on how to exploit gas shale resources have become conventional, and the Barnett Shale has become a huge success.

Albert Oko
Houston

Imagine That

Looking only at the time structure maps shown in figure 1 of the December Geophysical Corner, one could easily enough imagine that the trap is hydrodynamic, resulting from an eastward flow of formation water through the reservoir.

This is the general direction of flow that would be expected from a consideration of the regional geology of the Permian basin.

Nels Voldseth
Houston

For the Record

As a geophysicist with the U.S. Geological Survey's Earthquake Hazards Team who has spent a great deal of time working on the Parkfield Earthquake Prediction Experiment, I wish to clarify some misconceptions about earthquake hazards and the Parkfield earthquake that were published in the article "L.A. Quake Predictions Get Yawns" (August EXPLORER) and discussed in Robert Paschall's follow-up letter to the editor (October EXPLORER).

First, the USGS National Seismic Hazards Assessment maps use specific information about 190 fault segments in California, of which only 21 are part of the San Andreas fault. Other faults, about which too little is known to model them specifically, are included in these assessments by using seismicity- and geodesy-based models.

These maps and their associated products are inputs to building codes, the design of engineered structures and other public policy needs, such as setting insurance rates. Thus, while some individual research studies may focus on the San Andreas fault, other earthquake sources are far from forgotten.

Second, as quoted in the August article, Don Clarke is correct that the predicted Parkfield earthquake did not occur when expected and that this is important information.

However, contrary to the claim made in that article, the expected magnitude 6 earthquake did occur on Sept. 28, 2004. Results from the instruments installed for this experiment will contribute to earthquake hazards assessment research for many years to come.

For more information you can read a summary article in Nature, Vol. 437, 969-74; find additional details in the Bulletin of the Seismological Society of America (a September 2006 special issue, Vol. 96, No. 4, Part B); or read "The Parkfield 2004 Earthquake: Lessons from the Best-Recorded Quake in History," at http://online.wr.usgs.gov/calendar/2006/oct06.html.

Andrew J. Michael
Menlo Park, Calif.

The Stamp Act

Thank you for Barry Friedman's witty article about our effort to get a commemorative stamp issued to acknowledge the one industry that practically defined the 20th century (November EXPLORER). Surely this merits similar notice as Mr. Kermit the Frog.

Your article is a timely reminder of the need for educating the American public (and stamp advisory committee members) about the importance of what was accomplished on Aug. 27, 1859 – and in the 150 years since Edwin Drake's 30-barrel-day oil discovery. Few outside the industry understand the fascinating evolution of science and technology behind exploration and production. We therefore must demonstrate that our history is much more than pictures of wooden derricks; it offers an important context for teaching young people about the modern energy industry.

Industry financial support will be needed for raising public awareness. Thank you again for promoting the 150th anniversary in the EXPLORER.

Bruce Wells
Washington, D.C.

(Editor's note: Wells is co-chair of the Oil 150 Committee and executive director of the American Oil & Gas Historical Society.)

CLASSIFIEDADS

POSITION AVAILABLE

ASSISTANT PROFESSOR
(Geodynamics or Geophysics/Tenure-track)

The Department of Geology and Geophysics at Louisiana State University invites applications for a tenure-track Assistant Professor position to begin fall semester of 2007. Appointment at the Associate Professor level may be considered for an exceptional candidate.

Required Qualifications: Ph.D. in Geology, Geophysics, or related field at the time of appointment; outstanding geoscientist with demonstrated expertise in surface or near-surface geodynamics or geophysics; research program that combines quantitative modeling with field and/or analytical components; development of a strong research program, including supervision of graduate student research, active publication in highly ranked journals, and the generation of external funding.

Additional Qualification Desired: teaching experience. The successful candidate is expected to contribute to our undergraduate and graduate teaching programs and develop courses in his or her area of specialization.

The Department consists of 18 faculty members covering a wide range of expertise. In support of our faculty and students, we have well-equipped analytical and computational laboratories. LSU also has a major initiative in high performance computing through the Center for Computation and Technology (www.cct.lsu.edu). Geology and Geophysics has strong support from LSU alumni and administration. For more information about our Department, visit our web site at geol.lsu.edu.

An offer of employment is contingent on a satisfactory pre-employment background check. The review process will begin January 16, 2007, and will continue until candidate is selected. Interested persons should send a copy of their vita (including e-mail address), a statement of their research and teaching interests, and the names, addresses, phone numbers, and e-mail addresses of at least three references to: Jeffrey A. Nunn, Geodynamics Search Committee, Department of Geology and Geophysics, Louisiana State University (jeff@geol.lsu.edu), Ref. #000162, Baton Rouge, LA 70803. Applications from members of underrepresented groups are encouraged.

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U.S. Geological Survey, Chief Scientist, Central Energy Team, Supervisory Geologist/Geophysicist/ Chemist/Physical Scientist, GS-1350/1313/1320/1301-15

The U.S. Geological Survey (USGS) invites applications for the position of Chief Scientist, Central Energy Resources Team, in Lakewood, Colorado. The Team Chief Scientist supervises a staff of approximately one hundred ten (110) research and operational personnel. Strong scientific leadership and managerial skills are essential. Also required is a comprehensive knowledge of the scientific principles, concepts, and practices that apply to the Team's principal areas of investigation, which include the assessment of solid, liquid, and natural gas energy resources, energy economics, geochemistry, and geophysics related to petroleum systems. The primary research emphases of the Team are the geologic and geochemical processes that lead to assessment of oil, natural gas, and coal. Strong written and oral communication skills are required in order to effectively convey the USGS results to other Federal and State agencies, universities, and other institutions, and to engender their support and participation of USGS programs.

This is an interdisciplinary position that can be filled as either a Supervisory Geologist, GS-1350-15 (CR-2007-0083), Supervisory Geophysicist, GS-1313-15 (CR-2007-0089), Supervisory Chemist, GS-1320-15 (CR-2007-0090), or Supervisory Physical Scientist, GS-1301-15 (CR-2007-0091).

This is a permanent position with the starting annual salary ranging from $109,342 to $142,142. The position is located in Lakewood, CO, a suburb of Denver. This vacancy opens on 11/06/2006 and closes on 1/26/2007. **You must apply online in order to be considered for this position.** Complete qualifications information and application procedures can be found at: http://www.usgs.gov/ohr/oars/. Contact: Mary Dunlap, mmdunlap@usgs.gov or 303-236-9563 or Tina Garcia, tpgarcia@usgs.gov or 303-236-9569 with any questions. **U. S. citizenship is required.**

The U.S. Geological Survey is an equal opportunity employer.

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Research Petroleum Geologist Indiana Geological Survey

The Indiana Geological Survey (IGS), a research institute of Indiana University, seeks applications for a position in petroleum geology to conduct applied research related to the oil and gas systems located within the state and region. Core responsibilities of the position include: interpreting subsurface geological and geophysical information, assessing the content and potential recoverability of energy resources in place, and processing, synthesizing, and publishing scientific results. Masters degree in geosciences, publications record, and 5 years petroleum experience required. Complete job posting is available on the IGS Website (igs.indiana.edu). Indiana University is an equal opportunity/affirmative action employer.

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JOB OPPORTUNITY

An Independent E&P Company having affiliates actively engaged in petroleum exploration operations in North America, Africa, Central Asia, Middle East and Far East is seeking experienced geoscientists. The Group has offices in USA, Europe, Middle East and Asia. The selected candidates will be based in Houston, Texas. Job duties include interpretation of Gulf of Mexico 3-D seismic data and prospect generation for drilling and review and evaluation of 2-D and 3-D seismic data for joint ventures in Gulf Coast Region.

The applicant must have 5+ years offshore Gulf of Mexico experience and knowledge of latest geophysical methods and tools. Desired qualification is a degree in geology or geophysics.

Salary is competitive with excellent package of benefits including overrides and a chance to share in success of the Company.

Send resume to: hrop123@yahoo.com

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William L. Fisher Congressional Geoscience Fellowship

The American Geological Institute is pleased to announce the William L. Fisher Congressional Geoscience Fellowship. The successful candidate will spend 12 months (starting September 2007) in Washington, DC, working as a staffer for a Member of Congress or congressional committee. The fellowship is a unique opportunity to gain first-hand experience with the legislative process and contribute to the effective use of geoscience in crafting public policy.

Minimum requirements are a master's degree with at least three years of post-degree work experience or a Ph.D. at the time of appointment. The fellowship carries an annual stipend of up to $55,000. Support for the fellowship is provided by an endowment, established through the AGI Foundation, in honor of William L. Fisher.

All application materials must be transmitted by February 1, 2007.

For more details, visit www.agiweb.org/gap/csf. AGI is an equal opportunity employer.

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FRANK & HENRIETTA SCHULTZ CHAIR IN GEOPHYSICS SCHOOL OF GEOLOGY AND GEOPHYSICS COLLEGE OF EARTH & ENERGY UNIVERSITY OF OKLAHOMA

The University of Oklahoma invites applications and nominations for the frank & Henrietta Schultz chair in Geophysics. The chair holder will be appointed as a tenured Associate or full Professor in the School of Geology and geophysics. The chair holder is expected to add significantly to the University's petroleum geology/ geophysics education and research programs.

The successful candidate must have a demonstrated excellent research record and the vision to establish and lead a strong multidisciplinary research program in exploration geophysics. This includes the opportunity to work closely with both the Mewbourne School of Petroleum & Geological engineering, and Sarkeys Energy Center to investigate advanced seismic technologies to better define, characterize and manage oil and gas reservoirs. A qualified applicant should have demonstrated expertise in a range of exploration geophysics technologies such as advanced data acquisition, data processing, modeling, and attribute analysis. The ideal candidate will also have experience in using these advanced geophysical technologies as specific indicators of subsurface geological features of economic interest. The holder of the Schultz chair must also be an excellent educator, with commitment to both undergraduate and graduate (M.S. and Ph.D.) education. A Ph.D. degree in geophysics or a closely related field is required. Salary and benefits will be competitive and commensurate with experience and anticipated potential.

The College of Earth & Energy possesses extensive industry-standard software and well-equipped and maintained computing labs for seismic reflection processing, analysis, and interpretation on both PC and UNIX platforms as well as seismic rock properties characterization laboratory facilities. Additional information about the

See **Classifieds**, next page

Head, Department of Geology & Geophysics

UNIVERSITY OF CALGARY

The **Faculty of Science** invites applications for the position of Head of the Department of Geology & Geophysics, with a starting date of July 1, 2007. Candidates are expected to have an internationally distinguished record in teaching and research in any area of geosciences complementary to the Department's research strengths, and to have a demonstrated aptitude for leadership as well as administration. The successful candidate must be eligible for appointment as a tenured full professor, and be able and committed to lead the Department in its ongoing planning and expansion. The incoming Head will be expected to advance the Department's identity and vision, and articulate these to enable their furtherance and implementation.

Geology & Geophysics (www.geo.ucalgary.ca) is in the midst of an ambitious expansion, both in terms of student enrolment and staff. Recently initiated programs in petroleum geology and reservoir characterization are attracting students at the undergraduate and graduate levels to what is already the largest Department in terms of student enrolment in the country. Its research foci include energy, environment and solid earth geoscience, as well as geophysics, geochemistry, tectonics and petroleum geology. The Department is a major contributor to the University's Institute for Sustainable Energy, Environment and Economy (ISEEE), is part of a major building development program at the University of Calgary and is well resourced from both internal and external funding sources with especially strong ties to the Canadian petroleum industry. The Department also has strong links to, and collaborative research and teaching activities with, the Department of Chemical and Petroleum Engineering, and Schulich School of Engineering, as well as other Departments in the Faculty of Science. The Head will be expected to understand and nurture the aspirations of all the constituent groups in the Department during this expansion program, while ensuring that the Department remains cohesive and contributes effectively to the overall goals of the University.

Applicants should send a detailed resumé, a description of their administrative experience and aptitude for the position, and statements on their Research Expertise and Teaching Philosophy to:

Dr. J. S. Murphree, Dean of Science, University of Calgary
2500 University Drive N.W., Calgary, Alberta T2N 1N4
Fax: (403) 282-9154, Email: scidean@ucalgary.ca

Candidates should also arrange to have three referees send confidential letters to this same address. The initial closing date is **February 1, 2007**, but applications will be accepted until the position is filled.

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. To see all University of Calgary academic positions, please visit www.ucalgary.ca/hr/career

Colorado School of Mines
Geology & Geological Engineering
Charles Boettcher Distinguished Chair in Petroleum Geology

The Department of Geology and Geological Engineering at the Colorado School of Mines invites applications for the Charles Boettcher Distinguished Chair in Petroleum Geology.

An internationally recognized individual will be employed to conduct a vigorous and balanced program of undergraduate and graduate teaching and research in petroleum geology. The occupant of this Chair is also expected to lead the CSM petroleum geology program and promote interdisciplinary cooperation.

Applicants must possess an earned doctorate degree in the geological sciences or a closely related field and have industrial experience in the application of geologic principles in petroleum exploration and development. They must have a broad interest in petroleum occurrences and in research of subsurface fluid systems. By example, they must demonstrate to students both creativity and leadership in professional and scientific careers in some or all phases of petroleum exploration, evaluation, development, and management in industry and academia. They should have a record of outstanding research accomplishments, a proven capacity to recognize and respond to trends and needs of the petroleum industry, excellent interpersonal and communication skills, and a potential for excellence in teaching and directing research. Preference will be given to individuals who complement and add diversity of expertise to existing faculty, and who thrive in multidisciplinary environments.

For a complete job announcement, more information about the position and the university, and instructions on how to apply, please visit our web site at http://www.is.mines.edu/hr/Faculty_Jobs.shtm.

CSM is an EEO/AA employer.

www.UPDATE

By JANET BRISTER
Web Site Editor

An update to December's update:

In my last www.Update I wrote about a feature of the Datapages Archives that allows for browsing and searching of the AAPG Special Publications.

Some of you may have tried this feature only to learn it is unavailable to the private user.

There's a good reason why: This feature is for corporate subscribers only.

If your company has a subscription to the Archives you may now enjoy this new browsing method at the office. Some librarians are telling us this feature is a most convenient means of finding articles.

The AAPG member who is employed by a non-subscribing company is encouraged to contact Datapages staff at 1-918-560-9423 for details on how to gain access.

In the meantime, good browsing. ❑

DPA

from page 41

season and litigation often dictate operations, while risk scenarios, exit strategies, sustainability, repeatability, organic growth, etc., are the language and core values that drive much of industry management today.

Lost somewhere is the ethical core, entrepreneurship, environmental awareness and toughness that is our industry history.

* * *

So why DPA?

DPA provides a standard for ethical behavior with professionals who truly love the game and/or the science. For me it has been a chance to interact and learn from some truly great leaders and geologists, which is a huge plus for me as a professional.

DPA is unique, in that it does enforce ethical behavior, it does attempt to stand for the extraction science and it does truly represent **petroleum** geologists.

Today we attempt to serve our members' needs, provide policymakers with petroleum science, provide positions on political issues affecting geologists worldwide, monitor and train on ethical issues, provide technical training in a variety of specialties and provide a worldwide standard for experience and professionalism.

In a very real sense, we are a bridge to a past of greatness and a bridge forward for the young professionals today.

As the AAPG attempts to attract more diverse membership, DPA will remain not only a standard for competency and professionalism, but a defender of the ethics and strengths of the past. ❑

Classifieds

from previous page

college and the entities that it houses can be found at http://cee.ou.edu.

Review of candidates will begin January 1, 2007 and continue until the position is filled. The anticipated starting date is July 1, 2007. Applicants are requested to submit a complete vita/resume, statement of research and teaching interests, and a list of five references who can be contacted, including names, phone numbers, e-mail addresses, and complete mailing addresses. Questions or requests for additional information may be addressed to Dean Larry R. Grillot, Chair of the Schultz Chair Search Committee, at (405) 325-3821, or lrgrillot@ou.edu. Applications and nominations should be addressed to Schultz Chair Search Committee, University of Oklahoma, Sarkeys Energy center, 100 E. Boyd Street, Room 510, Norman, OK. 73019-1008.

The University of Oklahoma is an Affirmative Action, Equal Opportunity Employer. Women and Minorities are encouraged to apply.

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You can reach about 30,000 petroleum geologists at the lowest per-reader cost in the world with a classified ad in the EXPLORER.

Ads are at the rate of $2.10 per word, minimum charge of $42. And, for an additional $50, your ad can appear on the **classified section on the AAPG Web site**. Your ad can reach more people than ever before.

Just write out your ad and send it to us. We will call you with the word count and cost. You can then arrange prepayment. Ads received by the first of the month will appear in the subsequent edition.

DIRECTOR'S CORNER

Milestones Lay Base for Future

By RICK FRITZ

Once again it is the start of a new year – often a time for reflection and thinking about where you've been and where you are going.

Winston Churchill said, "The farther backward you can look, the farther forward you can see." For me, during the past seven years this has been a wonderful ride with many milestones along the way. I thank all of the members and staff for your hard work and support.

* * *

In the last half of 2006 we had a number of milestones:

✓ One of the most important for the Association was the development of a comprehensive five-year business plan developed for tactical operations that includes, for the first time, plans from all of AAPG's committees, Regions and Sections.

This document is based on our strategic plan, which will be used to guide AAPG's future. It is designed to improve our current activities and also to expand to a truly global association of professionals.

✓ The second milestone was the Perth International Conference and Exhibition (ICE) in Australia. Many said it couldn't be done, but with great hosts, a strong technical program and, of course, a good market for oil and gas, Perth was AAPG's largest and most successful ICE. Over 2,600 participants attended the conference. (See page 21.)

We thank the Perth Organizing Committee, the sponsors, speakers, instructors and all those who made this event possible.

✓ This fall we opened our first office outside of the United States. The European Region London office is open for business. Steve Veal is AAPG's director for the office and he is working with staff and members to provide new short courses and talks in the U.K. and Europe.

I predict this will be a great year for developing membership. Our numbers are significantly up over last year, with many new opportunities to reach new people.

✓ Other milestones include new AAPG products and services. One of the most interesting is the new geographic-based search of the BULLETIN digital archives. Members now have a choice of searching key words or choosing a world map to select large or small areas to search.

It is a powerful tool that is available to all AAPG members.

* * *

New Years also is a time for new resolutions – making changes. "Our dilemma is that we hate change but we love it at the same time; what we really want is for things to remain the same but get better," is one of my favorite quotes by American journalist Sydney J. Harris.

We have many opportunities to expand and improve this year:

✓ One of the products we are expanding is the popular series in the BULLETIN – E&P Notes. President Lee Billingsley and Editor Ernie Mancini have established a permanent group of associate editors to search and edit new papers on current exploration activity and developments in productive trends.

✓ Also this year we will design and build the Membership Registry. This is an electronic database for members who want to list all of their qualifications for review by potential clients. It will be a powerful marketing tool for AAPG members.

✓ Of course, our premier event this year is the AAPG Annual Convention, set April 1-4 in Long Beach, Calif. Long Beach 2007 promises to be an excellent meeting. We are ahead of schedule on exhibit sales and the technical program is strong.

During upswings in the petroleum industry, California has proven to be a popular place and we expect a large crowd. Long Beach will be a major networking opportunity and a great place to do business and have some fun.

✓ Finally, I predict this will be a great year for developing membership. Our numbers already are significantly up over last year, with many new opportunities to reach new people.

The AAPG Executive Committee has embraced the concept of "grassroots-based" membership development and they are working hard to find and develop new members.

✓ Editor and author James Baldwin said, "Not everything that can be faced can be changed. But nothing can be changed until it is faced." This year we have the opportunity to develop a global dues structure similar to our sister societies but fair for both U.S. and non-U.S. members. The Ability-to-Pay Dues Model will be considered by the House of Delegates in Long Beach.

* * *

It's easy to sit up and take notice; what is difficult is to get up and take action.

We encourage all members to be active and look for opportunities to be involved in AAPG, your Section or Region and your affiliated society to make this one of the best years in our professional history.

Happy New Year!

The AAPG House of Delegates will consider Bylaws changes at the April 1 meeting in Long Beach, Calif., to accommodate a graduated dues structure and miscellaneous housekeeping changes arising from previous House actions.

The legal notice publication occurs in early January via the AAPG Web site, e-mail notifications and postcards to members. See www.aapg.org for details.

An Emphasis on 'Petroleum' in AAPG

DPA – For the Love of the Game

By RICHARD G. GREEN
DPA President

One of the privileges of the DPA presidency is the writing of these columns. Many past DPA presidents have discussed why DPA was important to them. Now it is my turn and perhaps I have a different perspective to share:

DPA is not only the Division I chose to be active in, it is the primary reason I remain in our society.

I grew up in the oil business – both of my grandfathers were in the business, and my father and uncle are geologists today. We lived in western Kansas, where shallow oil drilling was steady and the oil businesses were largely family-owned, from small oil operators to service companies, workover rigs and drilling crews. Much of the business of oil extraction was done by handshake deals, and unethical behavior by anyone was soon known and not tolerated.

This was the business in which I grew up, run by men of integrity and toughness bonded by a search for an elusive commodity in a price environment unimaginably low to most young geologists today.

I fell in love with the oil business as it was then, not geology itself, which is why I emphasize **Petroleum** in AAPG.

Although I sometimes envy those who truly love the science of geology (as my father does), I love the game, not the science. Creating wealth and discovering what never has been found before, unlocking the correlation puzzle, the satisfaction of watching the oil and gas recovered in a DST, the sound of oil rushing into the stock tank and the smell of crude, the odor of money, gas whistling through the separator and cooling the flow line – these are the joys that keep me in the game. The oil game.

* * *

Today, these joys can still be found, but the industry has evolved in many ways – some good, some bad.

The small independent operators and the family-owned service firms are largely gone, most destroyed by the downturn of the 1980s coupled with poor federal policies and excessive regulation (often by bureaucrats with no regard for the environment and distain for the industry).

Technology has advanced in every phase of the business and, coupled with recent price increases, has allowed our industry to supply increasing amounts of energy to an ever-growing population worldwide. Hydrocarbons are now routinely extracted from reservoirs that were not considered economic – or even reservoirs – 20 years ago, and from locales, at pressures and at depths not dreamed of until this decade. All of this is exciting to anyone who loves the game.

However, the industry also is driven by the technology and by non-technical financiers, and only rarely by the risk takers of the past. Compliance issues, complex operating agreements and lease forms, environmental impact and archaeological studies, raptor nesting

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DPA Announces Candidates

The Division of Professional Affairs has announced its 2007 officer candidates. They are:

President-Elect

❒ **Rick L. Ericksen**, Mississippi State Board of Registered Professional Geologists, Jackson, Miss.

❒ **Craig W. Reynolds**, Cobra Oil and Gas, Wichita Falls, Texas.

Vice President

❒ **Jason G. Blake**, Titan Energy Resources, Park City, Utah.

❒ **Valary Schulz**, Matador Resources, Dallas.

Secretary

❒ **Paul W. Britt**, Texplore Inc., Houston.

❒ **Debra Rutan**, Crown Quest Operating, Midland, Texas.