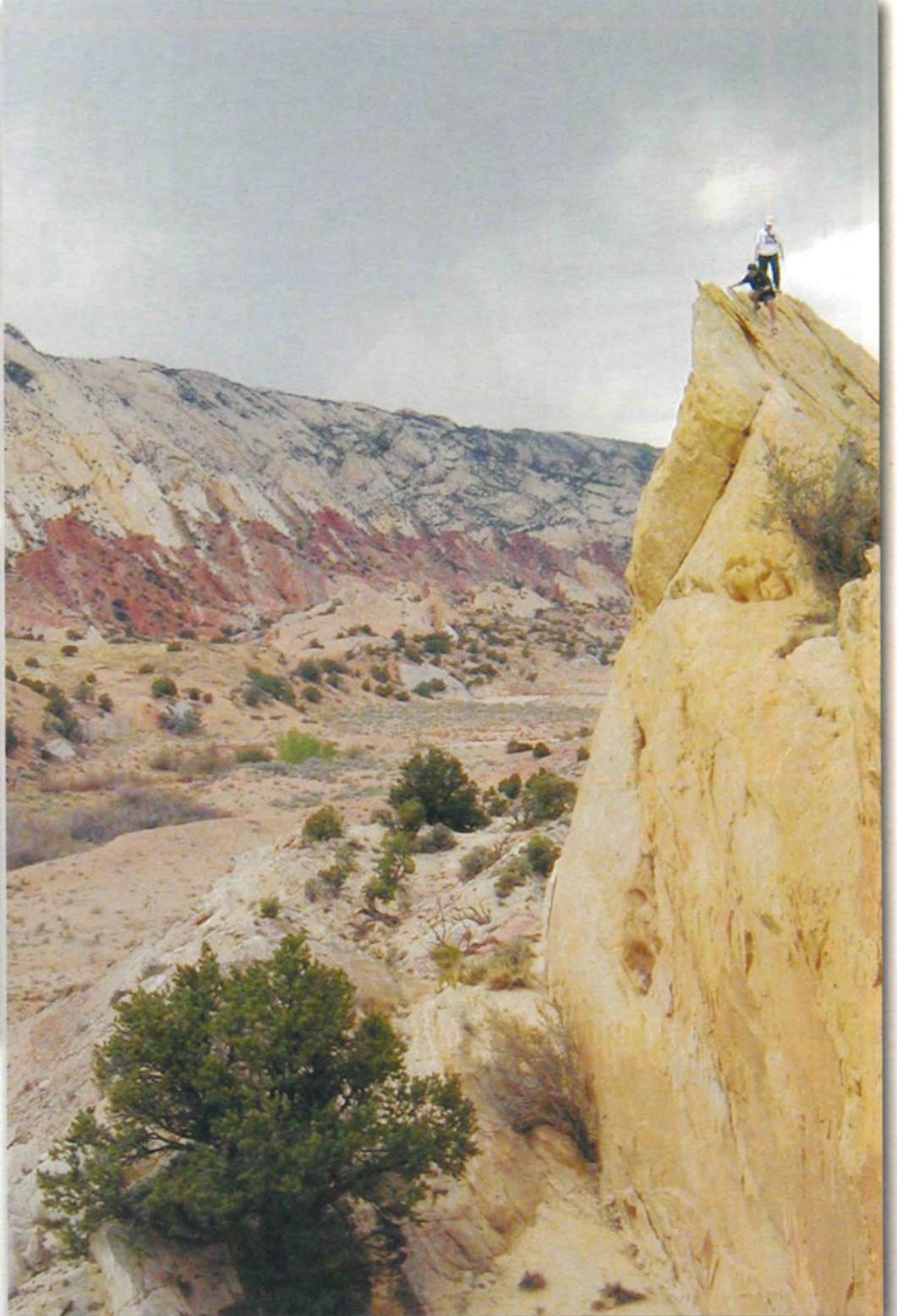


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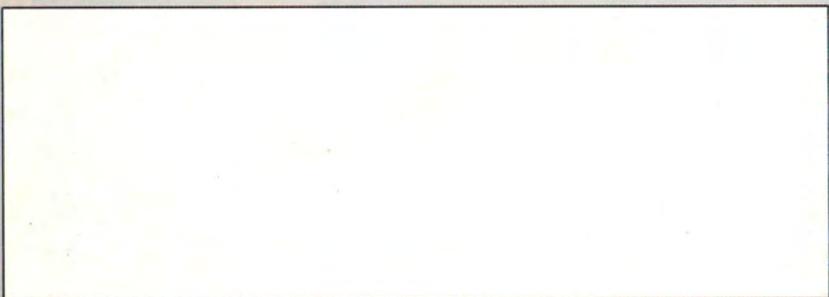
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JULY 2004

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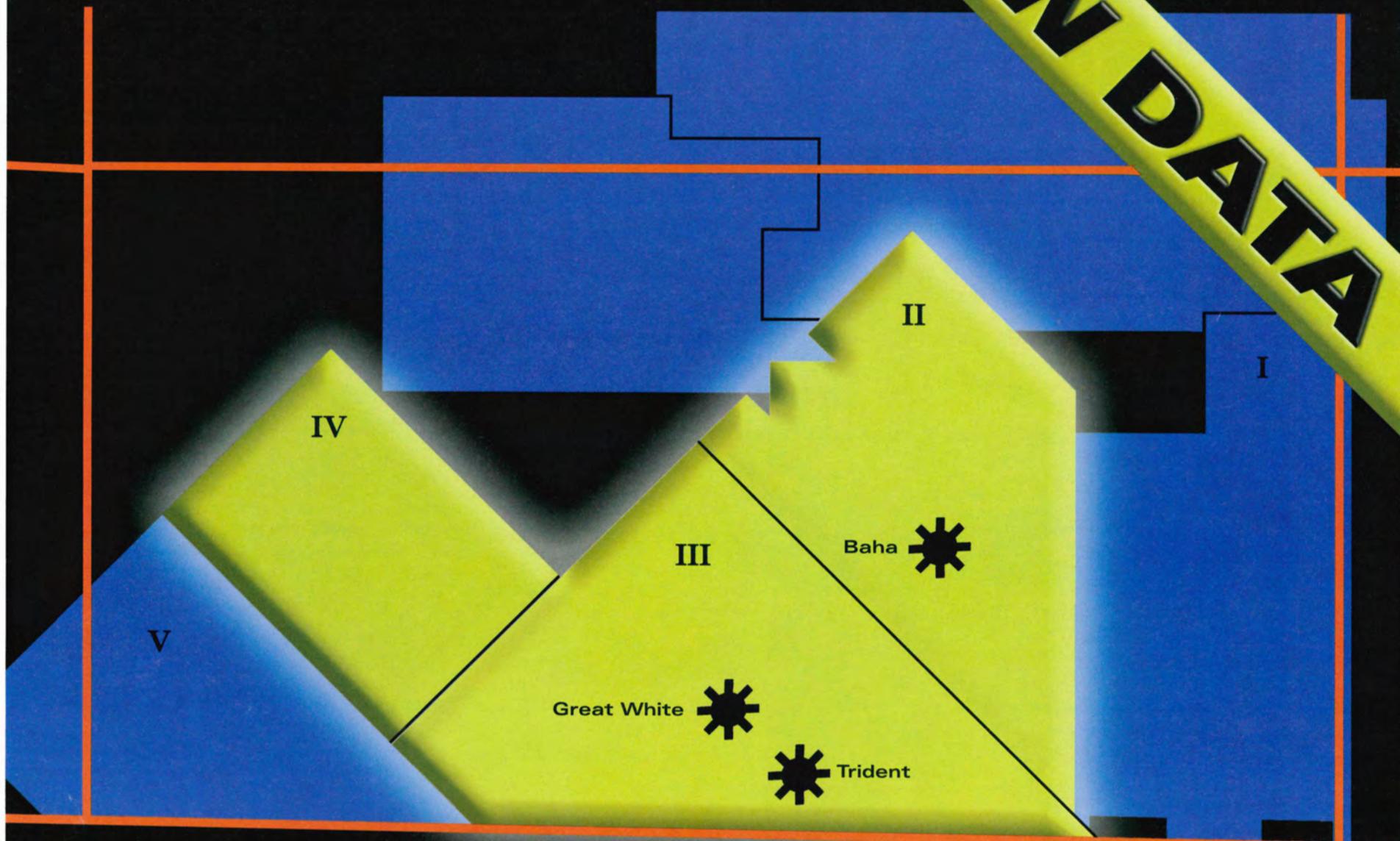


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**On the cover:** Some of the world's best geology can be found in the American West, and three of those locales provide the setting for some exciting AAPG education offerings this summer: (clockwise) the Gates of the Mountains, south of Great Falls, Mont; the Book Cliffs, north of Moab, Utah; and the Grand Canyon in northern Arizona. See Spotlight on Education, page 33. Cover photos courtesy of William Hansen (Gates of the Mountains), Thomas A. Ryer (Book Cliffs) and John Balsley (Grand Canyon).

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## PRESIDENT'S COLUMN

# Changing Along With the Times

By PATRICK J.F. GRATTON

Election to the presidency of AAPG is an honor that also brings considerable responsibility, especially at a time when the Association is increasingly confronted by substantial change.

For the next 12 months I will chair an Executive Committee (EC) that will leave no stone unturned seeking positive new opportunities and expanding the Association's ongoing good business/service lines.

At the same time, working closely with the headquarters staff, the EC will trim or eliminate those activities and programs that have diminishing or poor value and consequently have not enjoyed enough membership support.

In the process I hope we can enhance the already fine reputation of AAPG and deliver more for your cost of membership.

As an Association we are confronted by several major changes that directly impact our ability to deliver products and services to each of you. Consolidation of the energy industry has caused relocations to a few major centers and reductions in company exploration staffs. Yet, our membership is becoming more dispersed as increases in membership applications occur primarily outside North America.

This geographic conflict, concentration versus dissemination, is more expensive and challenging to provide services.

Similarly, the growth of hydrocarbon recovery technology as a supplement and/or substitute for our traditional focus on discovery technology requires our attention and response. The long-awaited better valuation of natural gas being realized primarily in North America is encouraging some changes in our existing research, publication and education programs and activities.

A higher oil price, still much less than its modern real annual average peak price (approximately \$65/bbl in 1981 in inflation-adjusted currency), is a very positive development for our members – but accompanied by some public protest.

In future columns I will report on EC actions regarding these and other issues. I expect to build on the growing transparency of the Association's governance, and I appreciate the House of Delegates (HoD) bringing those welcome changes about.

Along those lines, the EC will work closely with the Advisory Council, the HoD and the AAPG Foundation.

\*\*\*

Special thanks to the outgoing EC: □ President **Steve Sonnenberg** demonstrated strong leadership in negotiations with our sister societies. Steve covered the waterfront in why you should join, re-join or retain your membership. I endorse those points and will work to continue their appeal.

□ Vice president

**Erik Mason** was instrumental in several positive developments on the EC.

□ Editor **John Lorenz** accomplished the Herculean feat of shortening submission-to-publication time in the BULLETIN from 27 months to nine



Gratton

months! He also chaired the ad hoc BULLETIN Reformat Committee, which proposed major changes in our well-regarded scientific publication and was endorsed by the EC.

□ Treasurer **Paul Weimer** brought erudition and critically important new perspectives to many EC deliberations.

□ HoD chair **George Eynon** not only took care of his primary legislative responsibilities, but played a significant role in debate on many non-HoD topics.

My only fellow holdover to the 2004-05 EC is secretary **Bob Countryman**. We welcome newly elected treasurer **Clint Moore**, vice president **Neil Hurley**, editor **Ernie Mancini** and president-elect **Pete Rose**. **Valary Schulz** has joined us as the HoD chair.

So, the EC has got a new team! Members should anticipate a high energy level and purposeful interaction from the EC to all elements of the AAPG family.

There will be more focus on building community in AAPG. Accordingly, expect to see more of the EC at major Association venues. We want to improve communications, so let us hear from you.

## Divisions Announce Election Results

AAPG's three divisions have announced election results and seated officers July 1 for the 2004-05 term. They are:

### Division of Environmental Geosciences

□ President-elect – **Steve P. Tischer**, ARCADIS, Midland, Texas.  
□ Vice president – **Charles Chris Steincamp**, Depew & Gillen, Wichita, Kan.  
□ Editor (2004-06) – **Gerald R. Baum**, Maryland Geological Survey, Baltimore.

### Division of Professional Affairs

□ President-elect – **Deborah K.**

**Sacrey**, Auburn Energy, Houston.

□ Vice president – **Daniel J. Tearpock**, Subsurface Consultants & Associates, Houston.

□ Treasurer – **Jeffrey C. Greenawalt**, Wilmoth-Clark E&P, Pittsburgh.

### Energy Minerals Division

□ President-elect – **Peter Warwick**, U.S. Geological Survey, Reston, Va.

□ Vice president – **Elizabeth B. Campen**, Campen Consultants, Billings, Mont.

□ Secretary – **Samuel H. Limerick**, Z Inc., Reno, Nev.

## New Executive Committee Seated

## Gratton Assumes Presidency

Patrick J.F. Gratton, a Dallas independent, has assumed leadership of the Association's Executive Committee as AAPG president for 2004-05.

Gratton, president of Patrick J.F. Gratton Inc., is a Denver native who attended the U.S. Coast Guard Academy and holds bachelor's and master's degrees in geology from the University of New Mexico.

He began his career as a geologist with Utah Construction and Mining in Denver, then joined Shell Oil in Roswell, N.M., in 1958. He was a geologist in Tyler, Texas, when he joined Dalhi-Taylor Oil Corp. in Dallas in 1962. He also was geological manager for Capitan Inc. in Dallas, and later a partner and operations manager for Nearburg Oil Properties before becoming an independent in 1970.

Joining Gratton on the Executive Committee is Peter R. Rose, of Rose & Associates in Austin, Texas, who recently was voted president-elect by the AAPG membership.

Rose will serve as president in 2005-06.

Others recently elected to the 2004-05 Executive Committee are:

□ Vice president – Neil F. Hurley, of the Colorado School of Mines, Golden, Colo. (one-year term).

□ Treasurer – Dwight "Clint" Moore, registered professional geologist, Houston (two-year term).

□ Editor – Ernest A. Mancini, University of Alabama, Tuscaloosa (three-year term).



Gratton

Remaining on the committee is Robert L. Countryman, with Occidental Petroleum, Bakersfield, Calif., who is serving the second of a two-year term as secretary.

Also joining the Executive Committee is Valary Schulz, with Matador Resources, Dallas, this year's chair of the House of Delegates. □

## 2004-05 AAPG Executive Committee



Hurley



Rose



Moore



Countryman



Mancini



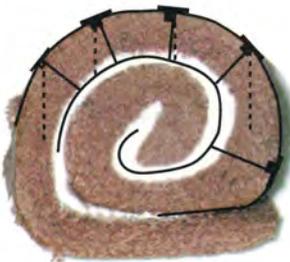
Schulz

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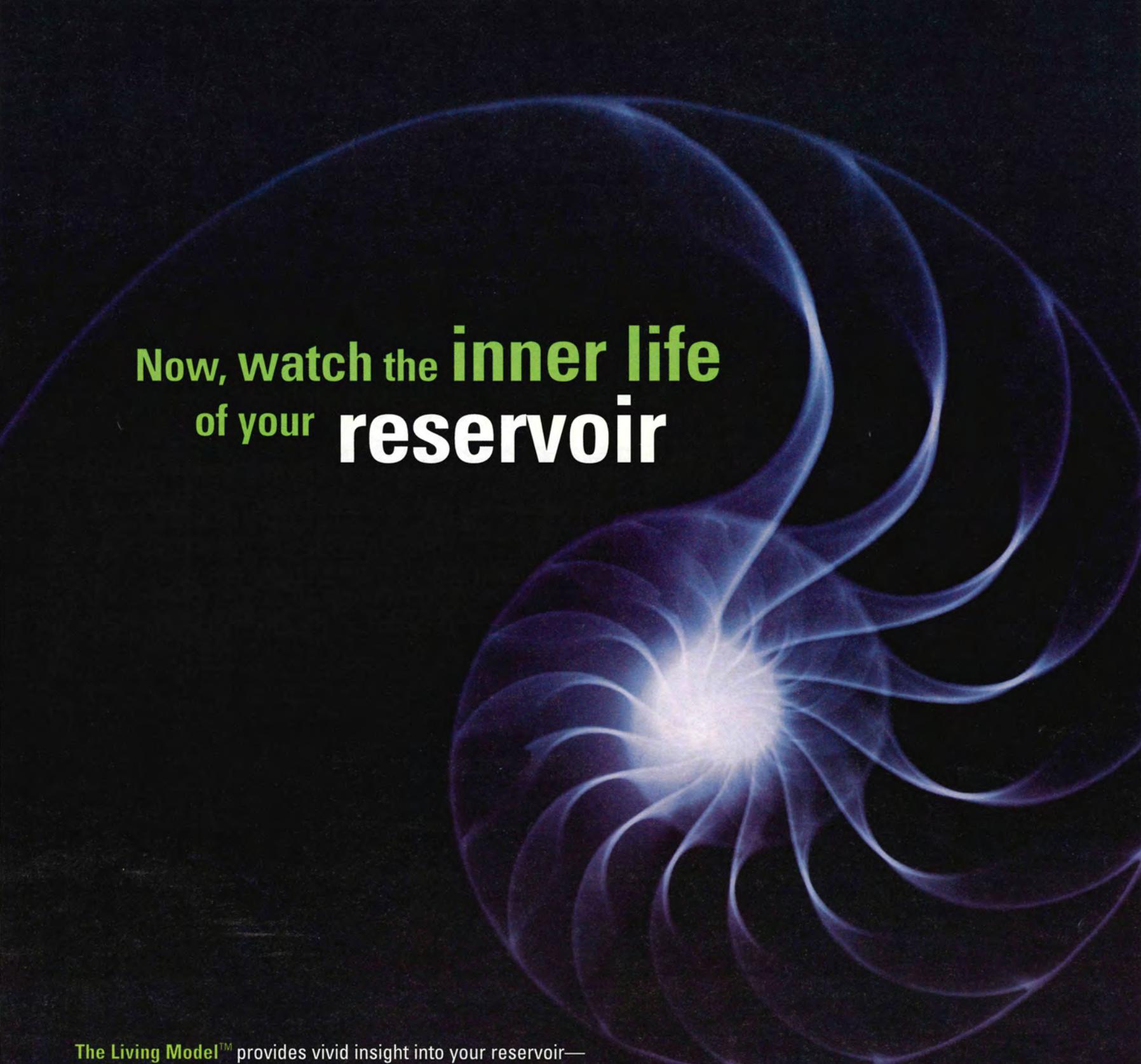
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## Election Guidelines

## AAPG Candidate Campaign Policy

(Editor's note: The AAPG Executive Committee has adopted this Election Campaign Policy as a guideline for AAPG officer candidates.)

**Preamble**

The American Association of Petroleum Geologists is a respected scientific organization of professional geologists. The furtherance of the purposes of AAPG is best served by elections that are conducted in an honorable and dignified manner.

Pursuant to the authority granted by the provisions of Article III, Section 2 of the Bylaws of AAPG, the Executive Committee of AAPG adopts this Officer Election Campaign Policy to assure fair and complete debate by the candidates for AAPG offices.

Candidates for office in AAPG and the membership of AAPG shall support the principles of the policy by strict adherence to both the spirit and the letter of the policy.

**A. Campaign Activities**

1. General – Candidates may attend meetings that they routinely attended prior to becoming candidates, but no campaigning may take place at such meetings during the period of candidacy unless all candidates for the office are present and provided equal opportunity to be recognized and heard. In all communications with members, comments or responses may not be self-aggrandizing or derogatory to an opponent; a professional demeanor will

be maintained at all times.

2. Annual and Sectional Meetings – Candidates are encouraged to attend the annual and sectional meetings of AAPG and be introduced, meet with the members, address gatherings at the request of the president of AAPG, and respond to questions from members.

3. Meetings of Affiliated societies, Associated societies and other organizations – Candidates may attend meetings not described in Sections A.1 or A.2 at which a significant number of AAPG members may be present, as

long as all candidates for the same office have been invited. Candidates wishing to attend such meetings shall notify the executive director of AAPG not less than 14 days prior to the first day of the meeting. The executive director will determine if all candidates have been invited. A candidate may not attend any meeting in this category if all candidates for the same office have not been invited to attend.

4. Organizational Memberships – During the period of candidacy, candidates will not apply for

membership in or join an organization that is directly or indirectly related to or associated with AAPG without the prior written approval of the president of AAPG. Upon an adequate written request by a candidate, approval may be granted when membership in an organization is demonstrably important to a candidate's ability to practice professionally.

5. Other Activities – Candidates for office in AAPG and members of AAPG are not permitted to participate in or arrange for, and shall discourage non-members of AAPG from participating in or arranging for:

Mass mailings, letter writing campaigns or telephone campaigns on behalf of a candidate.

Receptions or cocktail parties for the purpose of promoting a candidate.

Lecture engagements that could be construed as personal promotion by or for a candidate (commitments made prior to learning of candidacy may be honored).

Interviews with the media with the intent to publicize or promote a candidate.

**B. Notification and Acceptance**

1. The chairman of the Nominating Committee, when contacting nominees to determine whether they will agree to stand for the office for which they are nominated, shall notify them of the pertinent provisions of this policy. The

See **Guidelines**, page 25

Ballot Slate for 2005-06  
AAPG Leadership Set

Nominating Committee chairman Marlan W. Downey has announced the following slate of candidates, who will stand for AAPG election for 2005-06.

The president-elect winner will serve as AAPG president in 2006-07. The vice president will serve for the 2005-06 term, and the secretary will serve for 2005-07.

The candidates are:

**President-Elect**

Thomas Ahlbrandt, U.S. Geological Survey, Denver.

Lee Billingsley, Abraxas

Petroleum, San Antonio.

**Vice President**

Douglas G. Patchen, West Virginia Geological Survey, Morgantown, W.Va.

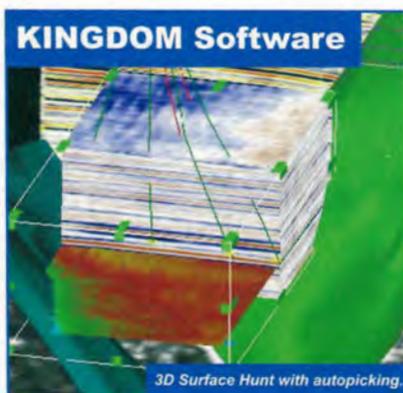
Steven L. Veal, DCX Resources, Denver.

**Secretary**

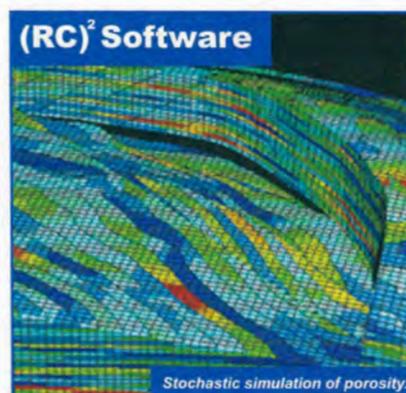
John R. Hogg, EnCana Corp., Calgary, Canada.

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

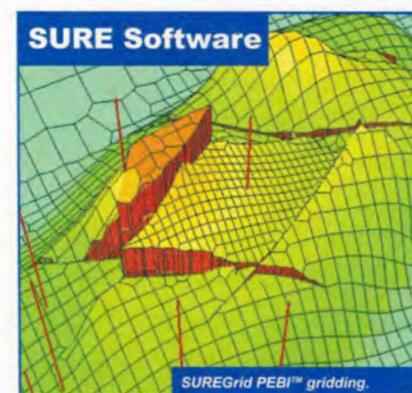
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*Portfolios Need Prospects***Exploration's Role is to Create Value**

By KATHY SHIRLEY  
*EXPLORER Correspondent*

For today's exploration industry, gain is the name of the game.

The buzzword is "value creation," which is the value of those discoveries versus the dollars spent to make them.

Strong oil and gas prices have focused industry attention once again on exploration opportunities. But exploration is no longer simply a matter of playing the odds by throwing money at prospects and ultimately finding substantial reserves.

Today's oil and gas firms must devise exploration plans tailored to their individual company philosophies and exercise strict discipline in implementing those plans.

That was the message that came through loud and clear recently at the AAPG Annual Meeting in Dallas – especially in a forum titled "Delivering On Our Promises: Managing E&P in the 21st Century."

For example, Andrew Latham, vice president of energy consulting with Wood Mackenzie, presented a paper titled "Value Creation Through Exploration," and discussed how the top 25 companies have fared in the last seven years in creating value through exploration.

His discussion highlighted what works – and what doesn't.

Here's some good news in his talk: The overall results of the 25 companies working in 80 different countries are positive, according to Latham. The firms spent \$50 billion on exploration and created \$23 billion in value (while discovering 45 billion barrels of oil equivalent of commercial reserves). That equaled an 11 percent return on their investment.

Performance was varied for the group of companies, however. Only 16 of the 25 created value, and nine companies failed to replace production through exploration, leaving 13 companies that both created value and replaced reserves.

Some of the companies that have done a good job replacing reserves and creating value, according to Latham, are British Gas, Phillips Petroleum, Eni, Statoil, Petrobras, TotalFinaElf and BP.

**Deepwater**

Another interesting recent indicator is that major oil companies have continued to constrain exploration expenditures, closing the gap with mid-sized oil companies. Those mid-sized firms are investing in exploration at twice the relative rate of the majors, he said.

Exploration is not the only means for creating value, and Latham outlined how acquisitions by the 25 companies fared:

- ✓ The firms spent \$140 billion on nearly 170 international mergers and acquisitions from 1996 through 2002 and created \$23 billion in value for a 12 percent return on their acquisition investment.

- ✓ 16 companies created value.
- ✓ 20 companies replaced production from acquisitions.

- ✓ 12 companies created both value and replaced reserves.

While acquisitions certainly factor into every company's overall business plan, Latham's talk focused primarily on exploration. He noted that – not surprisingly – value creation by country also varied.

Some data:

- ✓ The U.S. deepwater Gulf of Mexico ranks first with value creation of \$11 billion from \$11 billion spent on exploration.

- ✓ Kazakhstan, by far, created the most value, almost \$7.5 billion, on the least amount of exploration expenditures.

- ✓ Angola was third in value creation at about \$6 billion.

- ✓ The United Kingdom performed the worst, with \$11 billion in exploration investment, but value destruction of \$2 billion.

Not surprisingly, these numbers indicate that deepwater regions and the Caspian Sea region were the premier

exploration targets while exploration in onshore and shelf regions overall resulted in value destruction.

Global exploration success is now mostly from deepwater regions, he said. Deepwater accounted for 65 percent of all oil and gas discovered in 2002 and 2003, a huge jump from about 35 percent in 2001. Deepwater reserves discovered per well from 1996 through 2003 have averaged 50 million barrels of oil equivalent compared to just 15 million barrels of oil equivalent for non-deepwater exploration wells.

The good news, he added, is there appears to be plenty of life remaining in

deepwater exploration regions.

According to Wood Mackenzie, six billion barrels of oil and two billion barrels of oil equivalent of gas have already been produced from deepwater plays, and 44 billion barrels of oil and 26 billion barrels of oil equivalent of gas remain to be produced. Those figures are dwarfed by the estimated 114 billion barrels of oil and 68 billion barrels of oil equivalent of gas yet to find in the deepwater plays around the world.

However, the value of deepwater

continued on next page

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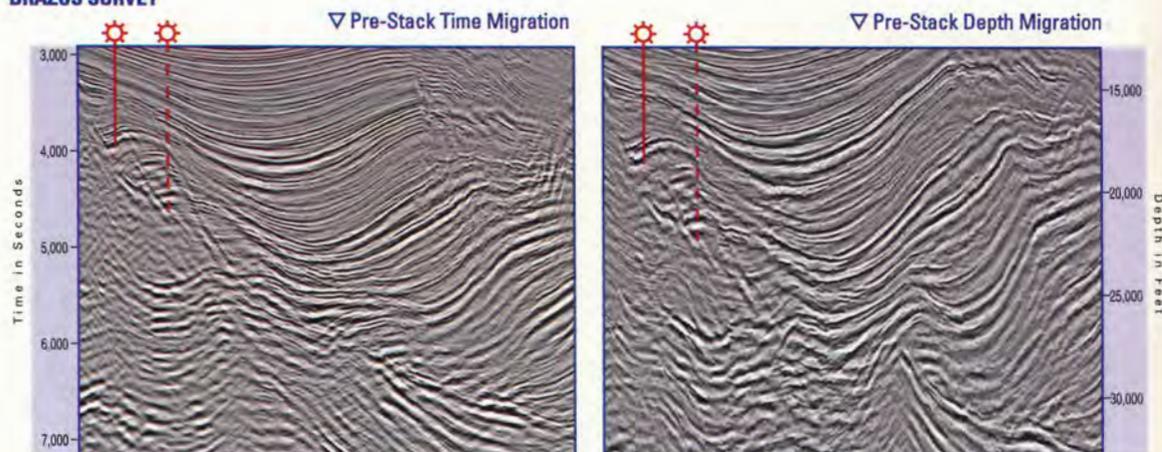
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continued from previous page

reserves has declined since the mid-1990s due to several factors, including moves to higher tax regions, stranded gas, longer lead times and fewer giant oil fields.

As a result, the quality of new deepwater reserves will be a real challenge for companies.

**Delivering**

The outlook for exploration appears to be strong within oil companies.

A recent Wood Mackenzie survey indicated that about 60 percent of respondents said exploration can contribute to strong organic growth for the firm over the next five years, and over 60 percent said their exploration budget would be higher over the next five years.

About 55 percent of the respondents, however, said they have too few exploration opportunities in their existing portfolio.

Robert Ryan, general manager of global exploration for ChevronTexaco, used his paper ("Delivering on Our Promises: Improving the Value Proposition") to build on Latham's theme, saying that since the mid-1990s wildcat success has held steady at about 30 percent. Excluding a few giants, the average discovery size has been around 50 million barrels of oil equivalent.

The majors performed well in 1999 and 2000, but not as well as before and even less since 2000, he said. The bad news is that the average value of discoveries has fallen and overall oil discoveries from new fields have replaced only 40 percent of production.

According to Ryan, companies who seek to improve value creation:

*The good news is there appears to be plenty of life remaining in deepwater exploration regions.*

- ✓ Must be more efficient in execution, stewardship and technology.
- ✓ Must have improvement in the consistency and accuracy of prospect selection.
- ✓ Prediction is essential.
- ✓ Exploration prospect generation must be consistent, technically driven, repeatable and measurable.

The approach to a basin, lease and then prospect must start with a technical assessment, Ryan continued, and then move through a series of steps,

including:

- ✓ Portfolio initial risk-reserves.
- ✓ Validating risk and volumes.
- ✓ Economic evaluation.
- ✓ Peer review.
- ✓ Decision review.
- ✓ Plan endorsement.

During this workflow, Ryan said it is essential to focus on the basics.

"All of this is easier said than done," he said, "but in general we must take a global view of the opportunities. People and capital resources must be deployed in the right places on the right projects, the appropriate technology must be integrated into the exploration program, there must be a strong focus on the fundamentals and everyone from the technical parts to the executive suite must be part of the process."

This rigorous approach allows companies to align predicted and actual results, thus managing exploration appropriately, Ryan said. He noted, for example, that in 2002-03 ChevronTexaco was able to align its volumetric results, achieving 104 percent of expected gross resources and 93 percent of expected net resources.

In 2002 ChevronTexaco had a best-in-class exploration year, discovering over 800 million barrels of oil equivalent, he said.

**Discipline**

Of course, the approach to exploration varies dramatically from a major oil company to a mid-sized independent, as was noted in the paper presented by Henry Pettingill, director, exploration portfolio, with Noble Energy ("The View from the Middle: Risk Management of an Independent's Exploration Portfolio").

Pettingill said exploration risk analysis is critical for smaller companies because numerous studies have highlighted the challenges faced by the exploration and production industry in meeting expectations.

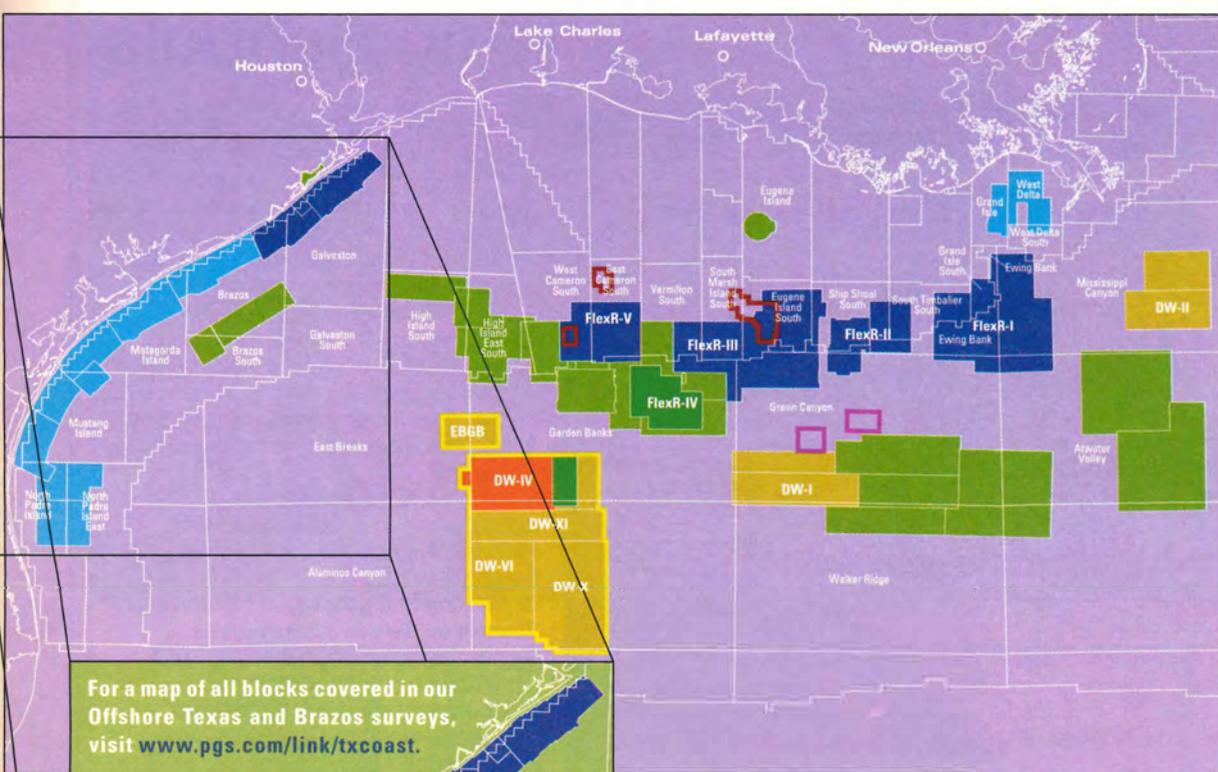
He pinpointed several keys to overcoming those challenges, which include:

- ✓ Calibrate and compensate pre-drill and post drill expectations.
  - ✓ Select the best of the best.
- Companies should have a large portfolio of prospects and be selective about what gets drilled.
- ✓ Seek and capture project flexibility.
  - ✓ Fund project maturation. This allows the best targets to rise to the top.
  - ✓ Manage and communicate timeframes. A company must be willing to roll the dice repeatedly, he said.
  - ✓ Diversification with focus, not dilution. A mid-sized company must incorporate higher risk-higher reward projects, modest growth projects and short-term production replacement projects in its overall exploration portfolio, he said.
  - ✓ Good geology, geophysics and engineering.

Pettingill said a practitioner of risk analysis is like a reformed alcoholic: "You can conquer your weakness, but you are never cured and always one drink from relapse," he said.

"For an independent, discipline is required every day. We will not meet annual expectations with a come-and-go approach." □

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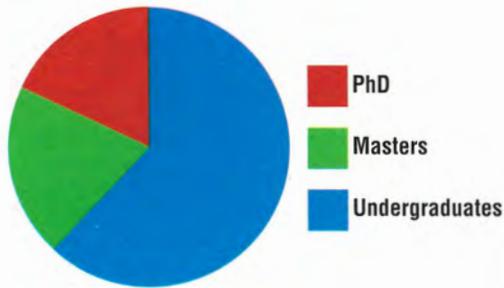


Figure 1 – Nature of the student population.

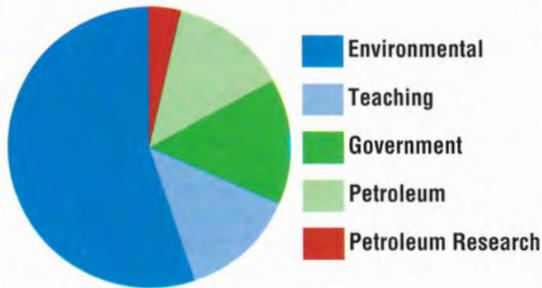


Figure 2 – Post-graduation activity in North America. (Data have been normalized to exclude non-geoscience employment.)

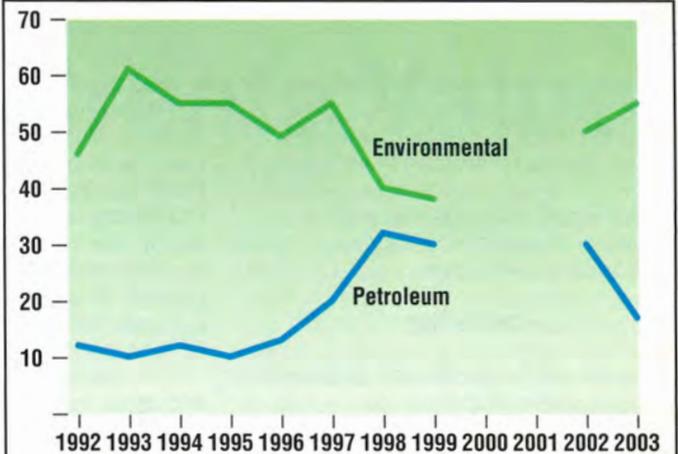


Figure 3 – Temporal trends in geoscience graduate employment in North America. (Data have been normalized to exclude non-geoscience employment.)

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Annual Survey

**Environment Dominates Geo-Schools**

A strong emphasis in environmental geology and a "significant increase" in the number of international graduate geoscience students at North American institutions are revealed in the latest AAPG Status of Academic Geoscience Departments report.

The newest survey – the tenth conducted by the AAPG Research Committee, all under the leadership of Barry Katz – was limited to departments in the United States and Canada, and included departments without graduate programs.

As in past years, the survey was intended to help define academic trends for geoscience departments. Katz said that the emphasis on environmental geology at the university level is evident in two key areas, according to respondents:

- ✓ It was number one in the "department's academic strength" category, replacing last year's winner, stratigraphy.
- ✓ More students – by far – are finding jobs in environmental geology than in any other sector. Environmental jobs accounted for more than 55 percent of those responding.

Conversely, the petroleum sector job market showed a "significant decrease," Katz said, coming in at about 13 percent.

The report is distributed annually to AAPG's Executive and Research committees, and is available on the AAPG Web site.

Other findings include:  
✓ There has been a decrease in geoscience department size as measured by both the number of faculty positions and students.

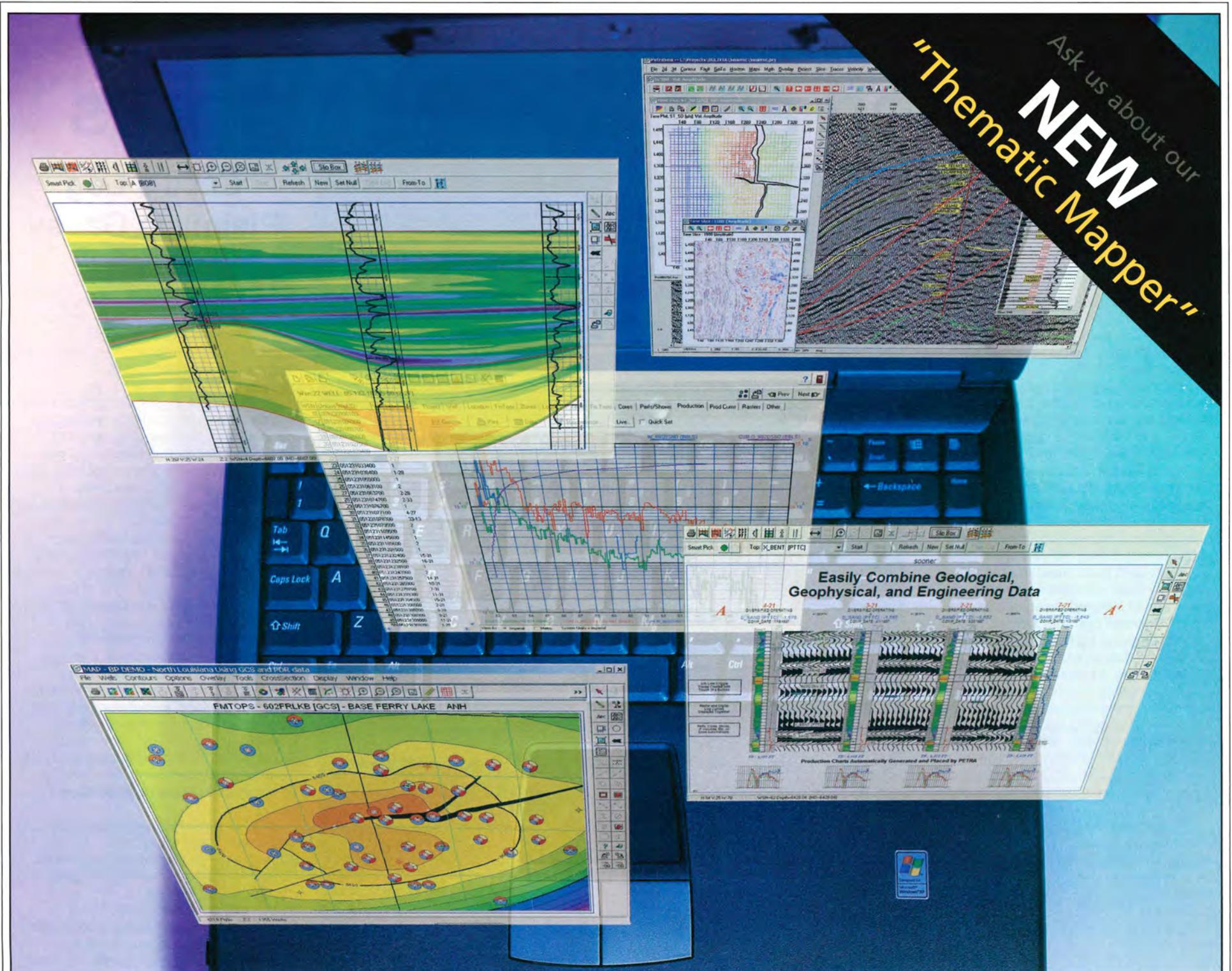
✓ Graduate students account for about 38 percent of the student population.

✓ International students account for about 29 percent of all graduate students (and 36 percent of all Ph.D. candidates).

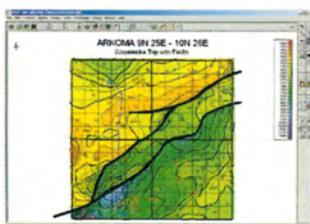
✓ The top three reported academic strengths were environmental geology, stratigraphy and hydrogeology.

✓ Only six departments report petroleum geology as a strength.

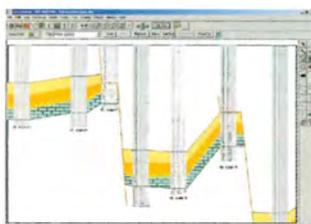
Additional information can be found online at [www.aapg.org](http://www.aapg.org). □



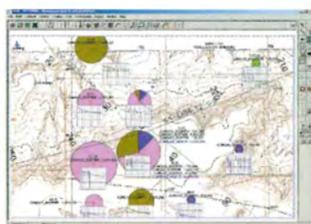
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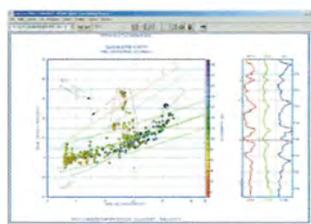
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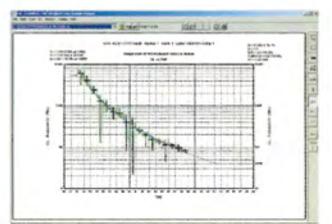
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'Geology 101' Gets New Applications

# The Tried and True Still Works

## 'Old-Timey' Geology Pays Off

Swift Energy has amassed an impressive track record using "Geology 101," i.e., paper maps, cross sections, etc., to find new production at Lake Washington field in Louisiana's Plaquemines Parish.

The water-drive field, which is located around a shallow piercement salt feature, was first discovered in the 1930s, and most of the drilling activity occurred in the 1950s and 1960s. The operating agreement between operator Exxon and partners Gulf and Shell required unanimous consent for each project, which proved to hinder development, minimizing the amount of data collected over the years.

When Swift purchased the field in 2001, the deal included no seismic, a few maps of isolated reservoirs where the most recent operator saw some opportunity, and computerized historical production data from Exxon.

Development proceeded in rapid-fire fashion following the Swift acquisition. In fact, the company has drilled close to 100 wells (averaging 500,000 barrels recoverable per well) with a 79 percent success rate, increasing reserves from 7.7 million barrels to 43 million barrels – a huge payoff using basic, nuts 'n' bolts geology.

"We started mapping at 1,500 feet and did multiple level maps," said Bill Moody, director of exploitation and development at Swift, "and probably made 150 old-timey structural cross sections.

"We did a lot of this on the copy machine, shooting logs down using reducing machines and basically built a framework of seismic lines from cross sections," he said. "We hooked all the faults up and made fault plane maps on all the faults, and we overlaid the subsurface structure maps in base fashion where we could see what the contours did as we went deeper."

### Deep Success

Using the computerized production data from Exxon, the team of geologists and engineers did a lot of material balance work to make sure the fault blocks mapped were large enough to handle the production that had come out of them.

If not, then it was back to the drawing board until the geology better fit the production data.

"Once we started drilling wells," Moody said, "the more we drilled, the more we liked it."

There are 70 productive sands in the Lake Washington area, according to Moody, and Swift has completed in 33 of these thus far, often encountering new sands by going deeper than the intended target.

"We've been steering the bit as much as we can along the salt face and taking it a bit deeper each time, using directional drilling techniques, which the previous operator hadn't used," Moody said. "This is how we came into the F Sand, which had not been seen

Reports by LOUISE S. DURHAM  
*EXPLORER Correspondent*  
Increasingly sophisticated E&P tools have proven to work near-miracles in much of the oil patch – but high-tech applications usually carry a correspondingly high price tag that would break the budget of the increasing numbers of small companies dotting the landscape. This doesn't have to be a "bad thing."

In fact, some of the bigger entities with deeper pockets purposely eschew the glitzy hydrocarbon-finding tools in certain instances, instead using old-style, tried and true methods.

Such an approach is people intensive, but the payoff can be substantial.

Here are two examples of how old technology is succeeding via new applications.

## Cecil's Log Plainly Is Gassy

Gas lift is a common practice in old Gulf Coast fields. For many of these fields, the availability – or lack thereof – of field gas to run compressors, pump engines, etc., is all that stands between production and shut-in.

A number of longtime operators who are picking over old fields are finding not only little stringer gas sands to meet field needs but substantial pay zones as well, using what appears to be a rather simplistic, relatively inexpensive well log that's been around for more than 30 years.

It's a cased hole log comprising three tools – gamma ray, density and neutron curves (GDN) – and it's found a lot of hydrocarbons for a lot of folks since it was initially developed in 1970, according to veteran exploration geologist Alan Pennington.

In fact, it's been dubbed the "gas-finding log" by a number of users.

It's also frequently referred to as the "Cecil Eicke log," in deference to the now-retired founder and owner of United Surveys (US) in Richmond, Texas, who developed the log with help from an electronics engineer at US, who continues as an on-site expert today.

"We've run it for everybody, both big and small," said Eicke, who spent his entire career in the wireline business. "There was a lot of trial and error in developing it, and we've done a lot of fine tuning over the years."

The GDN log appears deceptively simple: the sand shows up on the gamma ray, and gas presence is indicated by a reversal and ultimate crossover of the neutron and density curves. An old open hole log for comparison and verification helps but is not essential, according to Eicke.

Where the old log without the density-neutron curves showed interesting places, the GDN lets the owner go in for relatively little expense to verify gas, Pennington noted.

Operators have used the US log for a variety of applications over the years to:

- ✓ Locate gas behind pipe to aid in recompletion evaluation.
- ✓ Evaluate abandoned wells for possible re-entry.
- ✓ Help define depleted zones and moved water contacts in producing zones.
- ✓ Detect oil zones in some instances.

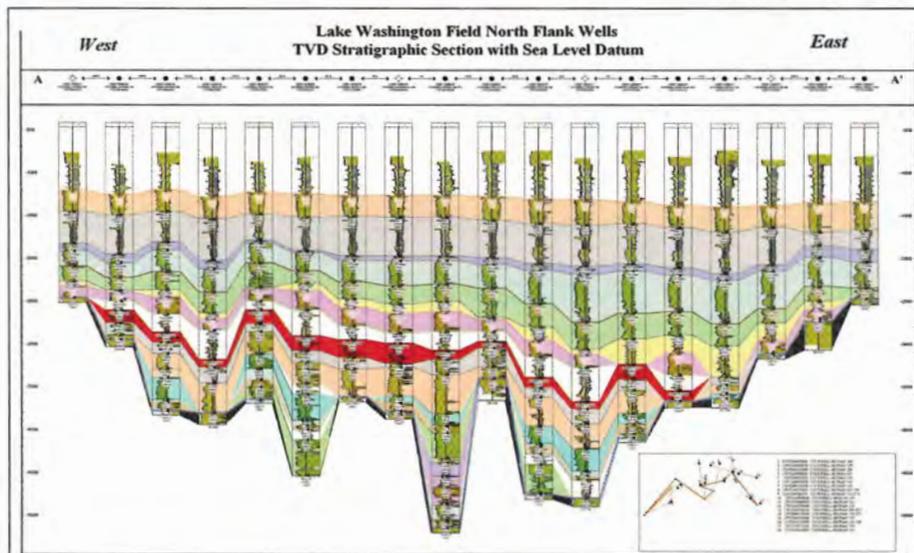
"It's as good a tool as any in the industry, cased-hole-log-wise, to indicate reserves remaining in the well," said Richard Lee, managing member of Masters Petroleum. "It also shows a gamma ray reversal where a zone has been swept, so you know to stay away."

"We've used it on close to two dozen wells up and down the Texas Gulf Coast with incredible accuracy," Lee said.

"For a company like Masters that makes its living re-exploring mature oil and gas fields," Lee said, "a log like this is invaluable."



Photo courtesy of Dale Klepper



Graphics courtesy of Swift Energy

Bit by bit, putting it together: Coming up with an exploration strategy for Lake Washington involved a lot of "old-timey" work, like piecing together cross sections.

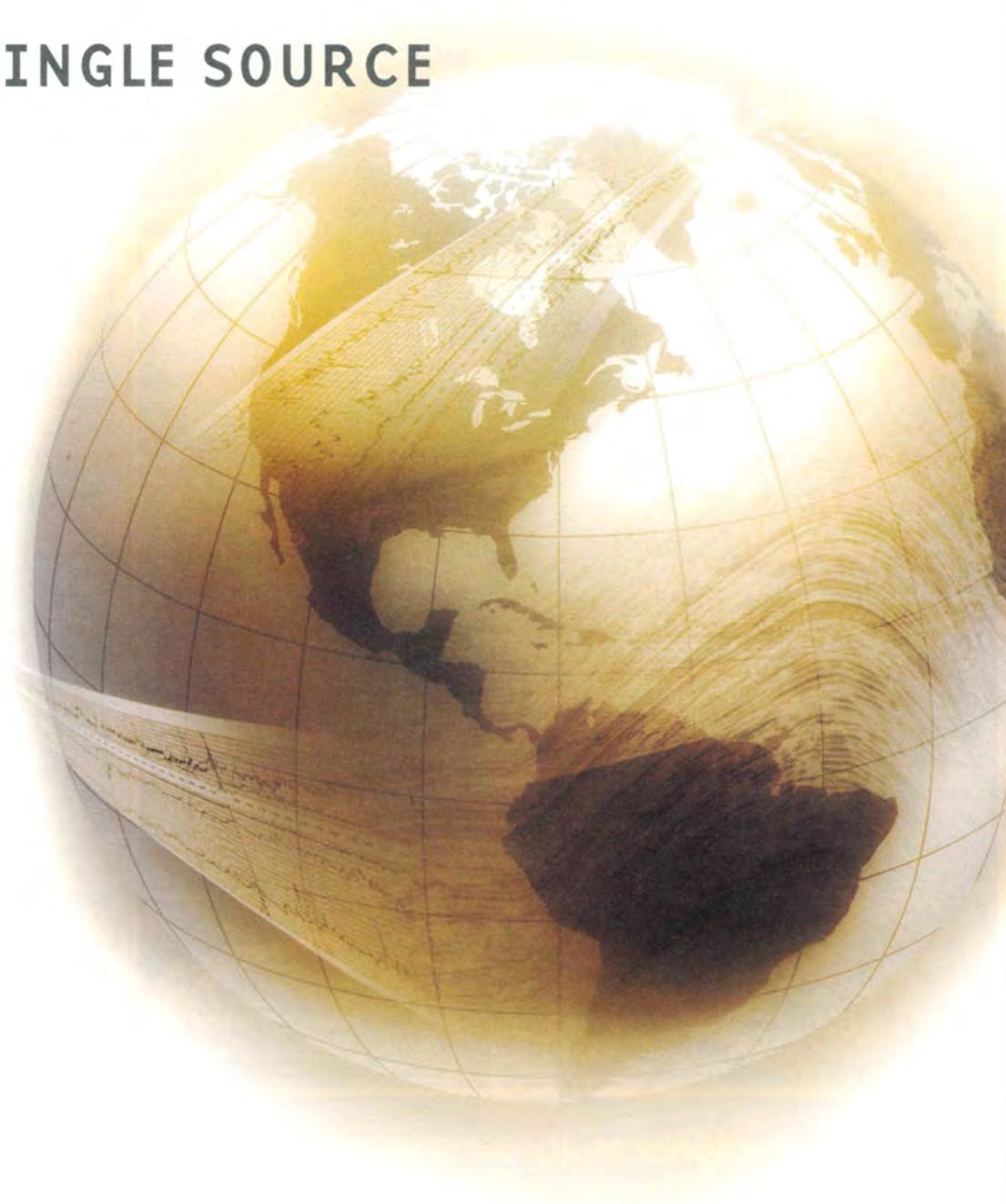
See **Swift**, page 14

See **Gas Lift**, page 14

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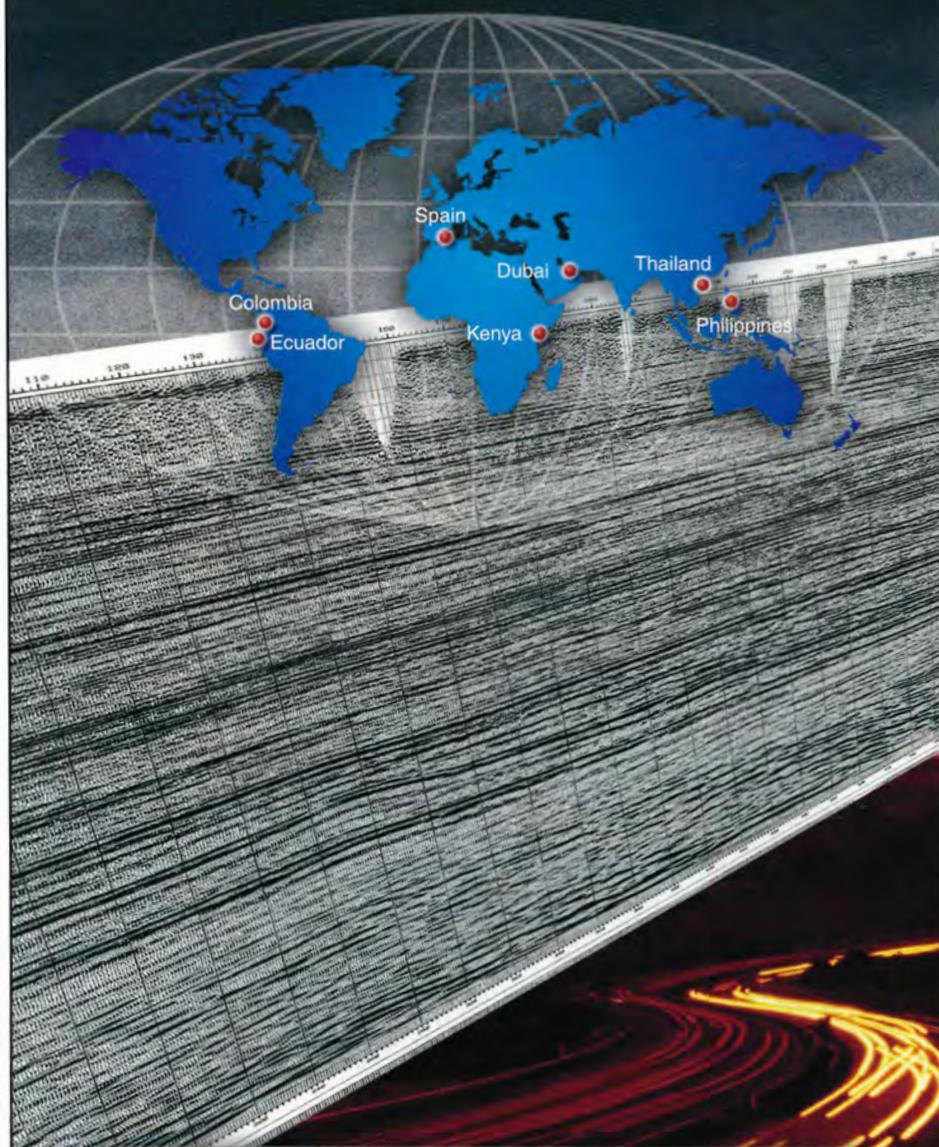
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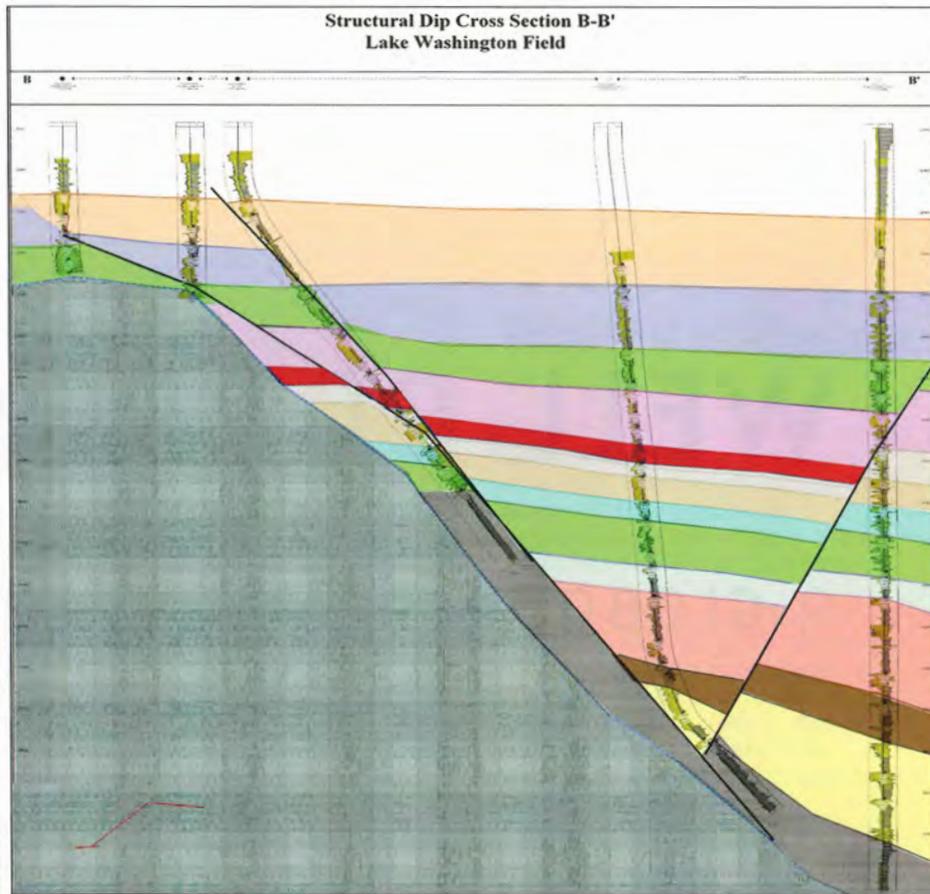
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Swift Energy has drilled close to 100 wells in the Lake Washington field – and is getting ready for a second stage of development – basing its exploration efforts largely on new applications of old technologies.

**Swift**

from page 12

productive in the field before, and now it's the most productive sand."

With the exception of a couple of wells, the company's drilling program to date has concentrated on depths no greater than 6,000 feet. The Swift team is gearing up to implement the second stage of development, targeting intermediate depths between 6,000 and 12,000 feet.

To do so, they'll go high tech, using 3-D seismic data, which doesn't come

cheap in the shallow inland-water environs.

The plan is to acquire 3-D data to get a better image of the salt face going down and help to better develop the field away from well control. Moody says it's possible there will even be another round of shallow development where the 3-D shows additional opportunities.

Although most of the Lake Washington production is oil, there is a substantial amount of associated gas being produced. A portion of the gas volumes is used for gas lift, which is necessary because of the low energy at the shallow depths being plumbed in the initial development stage of the property. □

**Gas Lift**

from page 12

**Good for Oil, Too**

There are a number of more sophisticated, expensive cased hole evaluation logs available, such as the pulsed neutron, or thermal neutron decay (TDT) logs. For those companies who need the information a TDT provides, such as porosity and water saturation, it's likely worth the expense.

In fact, a petrophysicist with a major may be inclined to take this path and bypass the GDN because it is qualitative and not quantitative.

"The GDN doesn't tell you porosity, but it does tell you there is gas effect," Pennington said. "It was developed for a niche market that doesn't need TDT or pulsed neutron and can get along fine with a less expensive version.

"It's the difference in a Mercedes and a Ford Taurus," he said. "Both get you there; it just won't be quite as in style."

Like a number of other operators who have used the GDN, Lee noted it's a head-scratcher as to just how the log works. Pennington says, simply, "nobody runs a cased hole density log like they do."

Although known and valued primarily as a gas finder, the GDN is also a pretty nifty tool to find oil.

"We've run this log on 30 or 40 old wells the last couple of years," said Richard O'Donnell, president Houston Petroleum Company, "and we've found a lot of both oil and gas with it.

"With oil, it doesn't necessarily give a crossover," O'Donnell said, "but you can see where the density pulls in and the neutron pulls out. When they get close, or begin to kiss, it indicates you've got some hydrocarbons there."

It worked for Lee. "We recently ran the log in a well at Red Fish Reef, where we saw a possible oil zone overlooked by Exxon," he said. "We perfed, and it came in flowing 200 bopd at 1,350 psi and no water.

"We've experimented with a lot of different logs," Lee said, "and I find it amazing that with all the very expensive, sophisticated tools out there, it's the old tried and true proven technology that's so often the best."

Pennington offers a personal endorsement for the myriad oil finders picking over innumerable old fields today:

"You should run this log in every well before you plug it," he said. "If you can find a little gas sand that will make a few hundred million, that's a lot of money – and this thing really has made a lot of money for a lot of people." □



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## AAPG Member Has the Charge

# Wind Power Fuss Blows Hard

By KEN MILAM

*EXPLORER Correspondent*

Forget school finances and gay marriage. The issue that's had the Kansas governor's phones ringing is wind power.

The debate has created some stereotype-breaking alliances and pitted landowners and environmentalists against other landowners and environmentalists.

And right in the middle is AAPG member and Kansas state geologist Lee Allison. Allison is chairman of the state's Energy Resources Coordinating Council, which is being reconstituted as the Kansas Energy Council, the primary energy planning and policy arm of state government.

As head of the council's Wind and Prairie Task Force, Allison's job has been to bring together conservationists, developers, property owners (such as fellow AAPG member Scott Ritchie of Ritchie Exploration Inc. of Wichita, firmly in the opposition camp) and others and try to strike a balance.

The group recently issued its report and guidelines for developing wind power in Kansas, which by several

measures is No. 1 in the United States in potential for the industry. While there is plenty of wind and desire for development in western Kansas, proposals to establish wind power complexes in the scenic Flint Hills has whipped up a tornado of contention, Allison said.

The Flint Hills run north and south, roughly dividing the eastern third of the state from the western portion. Because the Permian-age flinty outcrop was unsuited for farming, it contains the largest tract of "untilled" tallgrass prairie in the continental United States, Allison said.

That makes the area a treasure to conservationists and an opportunity for eco- and agritourism.

But untilled doesn't mean undeveloped. The region has transmission lines and capabilities lacking in the western part of the state, and is closer to urban areas, making it attractive to wind power developers, Allison said.

"It has split so many communities in so many ways," he added.

**Both Sides Now**

Among traditional environmental groups, the Audubon Society opposed development; the Sierra club, historically a supporter of wind power, has taken no stand on the Flint Hills.

A map of the tallgrass prairie lands by the Nature Conservancy is used by both sides to support their positions.

Some ranchers are excited at the prospect of leasing their land at approximately \$2,000 per year per turbine. Others, like Ritchie, who has a 20,000-acre ranch in the Flint Hills, say the installations would foul the scenic vistas for landowners and tourists.

"Kansas is presently promoting and enjoying tourism across these areas," Ritchie said.

"People won't come to ride the prairies under 35-story wind towers with rotating turbines and blinking lights on top," he said.

The task force came up with several recommendations on siting and guidelines for local governments. It also offered two options for the state to consider regarding the Flint Hills:

✓ Option A: Have the state or regional authorities provide

regulations and standards, enact a one-year moratorium on projects in the Flint Hills, repeal a tax exemption for wind developers and establish a seven-mile buffer around the tallgrass prairie as mapped by the Nature Conservancy.

✓ Option B: Restructure the tax exemption and prioritize the grassland into three classes – "no development," "restricted development" and "allowable in any suitable location."

Developers tend to favor Option B, said Jennifer States, managing director of JW Wind Power LLC of Lawrence, Kan., a subsidiary of German developer Juwi.

The task force was charged with developing a blueprint to encourage development of the wind power industry in Kansas while protecting environmental resources.

"It recognizes the importance of protecting ecologically significant areas while allowing rural economic development and meeting Kansas' growing energy needs," she said. "We can attain balance and we can achieve it all."

continued on next page



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While some ecological concerns, such as impact on prairie chickens, have been raised, the aesthetic issue is most often heard, States said, adding that many opponents have second homes in the Flint Hills.

"Those who live and work in the Flint Hills tend to be supporters," she said, "because the economy is really looking for opportunity for economic development in rural areas."

**Combat Zone**

Ritchie estimates 70 to 80 percent of Flint Hills landowners oppose the "industrial wind complexes."

While the area has been cut by transmission lines and roads, the view is largely unspoiled, he said. "There may be one road every three or four miles, and homes about the same distance.

"Even the transmission lines hide behind the hills – on most days you can't see them," he continued. "The

transmission towers are well below 200 feet, so they don't have blinking lights on them. They're not rotating and they're not on ridge tops. That increases the wind and the distance from which they (wind turbines) can be seen."

Using a petroleum industry example, Ritchie said "a 20-foot tank battery is less intrusive" than 70 to more than 100 turbines stretching over hundreds or thousands of acres.

Ritchie also said wind power currently requires tax subsidies to be viable, and added that Kansas exports 22 percent of the power it generates, "so we're not short of energy.

"The better case is, 'Here's this last bit of native prairie – let's don't throw it away.'"

According to Ritchie, most task force members agree that wind has a role to play in the state's energy future, but development should take place where it won't impact the native country as much and where communities favor the new industry.

Ritchie and Allison agree that coming to grips with the issue on a statewide level is a priority. With no state oversight in place, the task of regulating development falls to local government. The problem there is that some counties have fairly comprehensive zoning laws, others have limited zoning and others have none.

**Learning Curve**

Guiding the state effort has been a learning experience, Allison said. The SERCC was established in 2002 by Republican Gov. Bill Graves. Of the 13 members, three were appointed by

right of their positions – the state ratepayer advocate, chairman of the Corporation Commission and the state geologist.

Allison said he was a "compromise" as chairman because he represented a science agency without a stake in any disputes.

The council was continued under Democratic Gov. Kathleen Sebelius, who recently decided to increase the body to 23 members and rename it the Kansas Energy Council.

Allison said he spent a month carefully choosing members for the task force, and drew complaints from both sides that the membership was "stacked" in favor of their opponents.

He said Sebelius' instructions for the task force were clear: Preserve the grasslands while encouraging wind power in the state.

The economic incentives are significant, he said. A wind installation may represent a \$150 million investment. While the completed project may employ fewer than 10 full-time workers, other impacts include purchasing supplies, parts and services locally and taxes or in-lieu-of-tax payments to local governments, he said.

The installation is emissions free, and the relatively small footprint doesn't decrease the amount of cropland.

"Western Kansans see it as a major increase of income on their farms," he said. While ranching remains "marginally profitable, farming is under lots of pressure ... to keep the family operation alive."

Besides the visual aspect, opponents raise concerns about impact on wildlife and fragmentation of local ecosystems.

"Bird kills have been mentioned, but that can be reduced with proper siting a design," he said. Spinning turbines also emit a low, throbbing sound, he said. It isn't an either-or choice, however.

"The governor gave very explicit instructions – preserve the prairie and develop wind potential," Allison said.

Navigating the environmental, social and political concerns has been a learning experience, Allison said. His training as a scientist helped.

"There is a lot of technical information to bring together and come up with analysis and options – we're exploring for a solution here," he said.

"There are a lot of kinds of data that normally don't fit together. That's what we do in the oil and gas business." □

Photo courtesy of Lee Allison

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*Halbouty's Introduction Was a 'First'***Reagan Got Rousing AAPG Reception**

The death of Ronald Reagan on June 5 recalled memories of the visit of the then-former governor of California to the AAPG Annual Meeting in Oklahoma City on April 10, 1978.

Then-AAPG Executive Director Fred A. Dix said AAPG President Edd Turner asked Michel T. Halbouty to urge his longtime friend, Reagan, to be the keynote speaker – a good venue for an unannounced presidential candidate. Reagan was not an official candidate for president, although it was apparent he was positioned to be a major political force, having fallen just short of being the Republican nominee against Jimmy Carter in 1976.

Reagan flew with Halbouty in Halbouty's Lear jet to and from Oklahoma City. He arrived Sunday and attended a private dinner and later a reception in Turner's hotel suite.

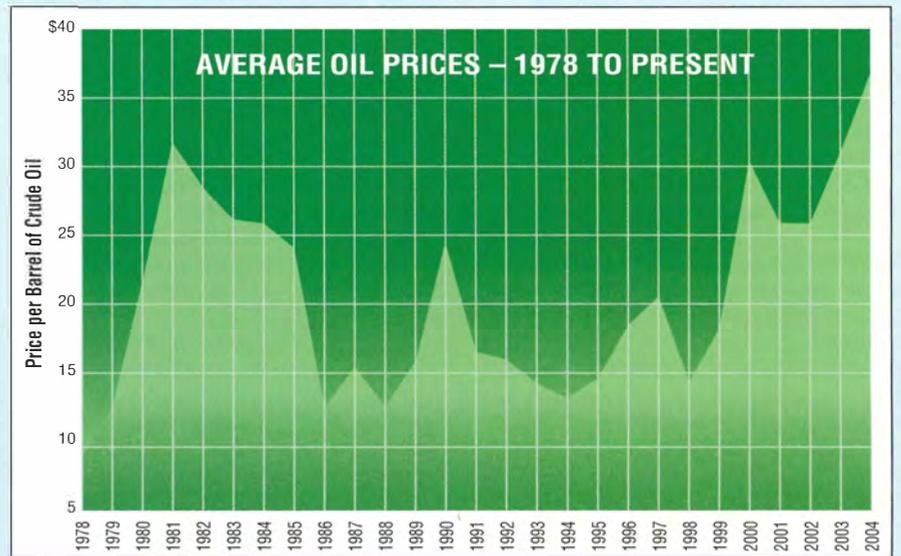
The Monday morning opening session at the Myriad Convention Center drew a standing-room-only crowd estimated at 4,500. Oklahoma's Democrat Gov. David Boren gave a welcoming address in



Reagan at AAPG, 1978

support of the oil industry in relation to action by the federal government according to the AAPG *Bulletin*. Reagan's topic was free enterprise.

Halbouty, just entering the prime of his life at a mere 68 years of age (Reagan



was a mere 67) gave a rousing introduction of Reagan. He ended by saying, "I now give you the next president of the United States." The crowd responded with a standing ovation.

Reagan said that was the first time he

was introduced with those words.

Twenty-one months and 10 days later, Reagan was sworn in as president of the United States.

— LARRY NATION

**Price Reverberates Through Politics***Are the Right Issues Debated? Speaker Says No*

(Editor's note: As global oil prices soar to unprecedented levels Americans face increases at gasoline pumps this topic was much discussed – and often debated – during the recent AAPG Annual Meeting in Dallas.

Nowhere were the assessments and opinions more on display than during and after the All-Convention Luncheon, which featured a provocative talk by Amy Myers Jaffe. She talked with the EXPLORER after her speech about the international oil situation, as did international oil expert Thomas O' Connor.)

By SUSAN EATON  
EXPLORER Correspondent

Amy Myers Jaffe, speaking to the All-Convention Luncheon in Dallas, not only presented her synopsis on a looming oil crisis, she warned that geopolitical issues could lead to a *déjà vu* of the energy crises of 1973 and 1979.

Those crises precipitated frantic lineups at gasoline pumps, panicked the American public and led to the introduction of smaller, more energy efficient vehicles across the nation.

Today, however, the pendulum has swung back, with a large percentage of Americans driving gas thirsty sport utility vehicles.

That's a sign, Myers Jaffe suggested, that the lessons of the oil crises in America have been forgotten during the intervening 30 years. She added, tongue-and-cheek, that a paper she wrote as an eighth grader on the 1970s oil crisis could be dusted off and published today in a learned journal.

In a sobering message, she said that while energy consumptive Americans are a large part of the problem, they nonetheless represent part of the future solution.

"In the United States, we have a tendency to externalize oil problems," she said. "We ought to look in the mirror, because the problem is us."

And she pointed to the serious consequences of not having a national



All-Convention Luncheon speaker Amy Myers Jaffe: "... We have a tendency to externalize oil problems. We ought to look in the mirror, because the problem is us."

energy policy: "The U.S. Senate is a group of people who can't even pass an energy policy."

Provoking thought and discussion amongst the audience, Myers Jaffe asked: "Do we really want to be in exactly the same place again in 30 years?"

Myers Jaffe is an associate director of Rice University's energy program, and a Wallace Wilson Fellow for energy studies at the James A. Baker III Institute for Public Policy at Rice University. An expert in Middle East oil geopolitics, she recently contributed to the joint Baker Institute/Council on Foreign Relations task force on the Guiding Principles for the U.S. Post-Conflict Policy in Iraq.

She described the disconnect in public attitudes in the United States: Americans want cheap domestic energy sources but don't want oil and gas drilling or liquefied natural gas terminals in their communities.

She said the AAPG membership has a significant role to play in the process of public education and awareness building,

of dispelling the NIMBY ("not in my backyard") response by the general public.

AAPG should focus on the importance of a strong domestic industry, she said, and should highlight the technological breakthroughs that make drilling safer and lessen the environmental footprint of oil and gas operations.

"Our nation's geologists are a brain trust that can be tapped to enhance public understanding of the importance of a strong domestic industry," she said. "There is no question that the United States should be doing more exploration at home. We have vast resources that could be brought to bear to lower energy costs for all Americans, especially natural gas resources that lie off the coast of Florida, off the East Coast and in the Rocky Mountain areas."

**Challenge the Paradigms**

Myers Jaffe challenged AAPG members to question several paradigms,

chief amongst them the assertion that Americans should have access to cheap oil.

"We cannot understand the oil world today unless we understand a fair price for oil," she said. "Three dollars per gallon for gasoline is cheap compared to Europe. The long-term trends in the United States will eventually marry itself with those in Europe."

In today's global marketplace – driven by the free trade of goods and services – Myers Jaffe questioned why oil should be treated differently than any other commodity.

"One-third of the world's population (or 1.8 billion people) lives with no modern energy services (electricity) so that 10 countries can have a high standard of living," she said, showing the audience a "map of global energy poverty."

The developing nations are questioning the paradigms embraced by the developed nations, she said, asking: "Why should our economies stand still so yours can grow?"

"We're not debating the right issues," she said of the geopolitical factors affecting global oil prices. "The U.S. needs to go back to its lies; OPEC needs to go back to its lies. We need open access to energy policy so that more than 10 countries can prosper."

Myers Jaffe presented a scenario for a sustainable future for the entire international community that was predicated on a fair price for oil. She laid out a theoretical road map to create a sustainable future for Iraq's oil production – a permanent government with an elected representative body empowered to establish a natural resources policy.

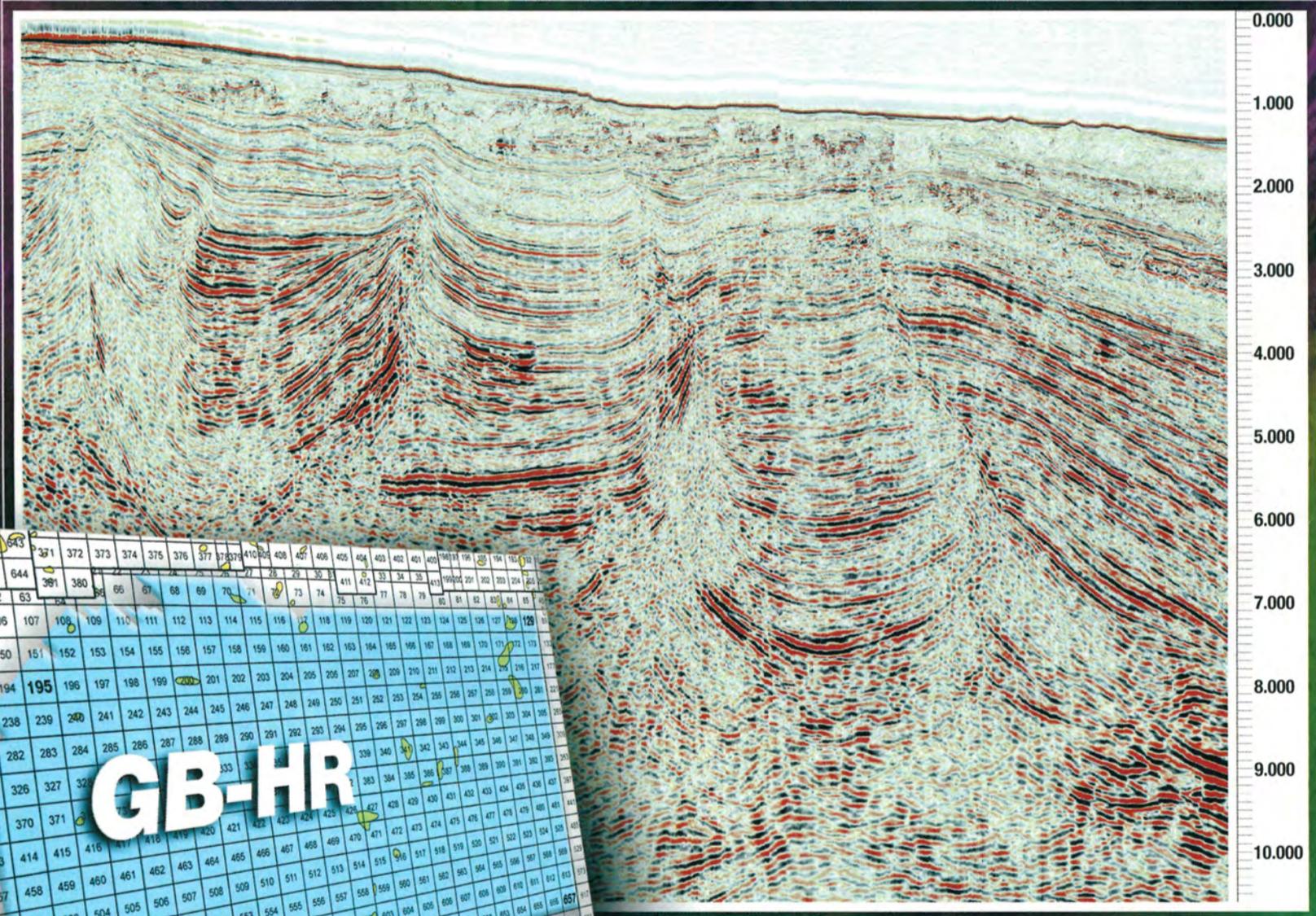
"Iraq's national oil industry must have clear authority to make investments and have access to funds to invest in oil field refurbishment and enhancement," she said. "This requires the creation of a national budget. Longer term, a national resources law is needed if the country

See **Geopolitics**, page 20

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## Turmoil Impacts Output Outlook

The Middle East, like all areas that are touched by or depend on the oil industry, will continue to go through major changes, according to AAPG All-Convention Luncheon speaker Amy Myers Jaffe.

For starters, she said the current political unrest in the Middle East has prompted oil companies to reduce investments in the region.

"We're moving into a time when we're going to see greater democratization and debate in the Muslim world," she said of the post-September 11 era.

She predicted that Iraq's daily production is unlikely to rise above 2.5

million barrels a day in 2005, due to the country's difficult transition to democracy.

"An opening to private investment in Iraq would promote steadier growth in oil production rates," she said, "but it remains uncertain whether the Iraqi people will choose this option."

Citing an oil crisis in Venezuela, Myers Jaffe predicted that Africa will continue to contribute the biggest, reliable growth in global oil supply. She suggested that political issues in Latin America, including Mexico's constitution, will discourage growth in oil production.

Calling Canada the "unsung hero,"

she predicted its "quiet growth" and advancements in technologies required to tap the unconventional resources contained in Alberta's oil sands.

Myers Jaffe described how renewable energy and new technologies to produce unconventional resources will achieve cheaper energy and environmentally sustainable growth for Americans.

"The line between conventional and non-conventional resources has blurred," she said. "I think we will see more companies turning to unconventional resources to make up the gap in supply."

— SUSAN EATON

## Geopolitics

from page 18

wants to solicit foreign investment.

"The U.S. and the United Nations have an obligation to do the thing properly," she added. "They have to define the role of the state, of the oil ministry and set up independent oil and gas regulators."

And she was adamant that the introduction of petroleum laws in developing nations include a framework of environment, health and safety laws.

"The system in Iraq should be set up to the best international best practices," she said. "What's the point of being 30 years behind the world's standards?"

### Working Smarter

AAPG member Tom O'Connor echoes Myers Jaffe's comments on the importance of building environment, health and safety legislation into a modern oil and gas regulatory regime.

O'Connor, an international petroleum management adviser, is one of three editors of the AAPG Special Publication, *International Oil and Gas Ventures – A Business Prospective*.

"It's completely unacceptable for oil companies to enter into the developing world and muck up the place in ways that would not be acceptable in their home neighborhoods," O'Connor said. "Shell is trying to deal with that issue right now in Nigeria."

However, O'Connor, the former principal petroleum engineer of the World Bank, approaches these issues pragmatically: "The Russian Federation has some of the best environmental laws and regulations in the world," he commented, "yet the place remains a mess because there are no effective regulatory compliance mechanisms."

O'Connor attended the Dallas meeting with guest Chaman Shah Ahmady, the chief of Afghanistan's Department of Oil & Gas Assessment and Contracts & Projects. Afghanistan is attempting to reorganize its oil and gas sector – despite ongoing battles with the Taliban – to attract foreign investment dollars.

Ahmady, he said, was educated in Romania, and has traveled extensively throughout the Eastern Block and the Former Soviet Union but had never visited the West before, let alone participated in a professional meeting like the AAPG session in Dallas.

"It was amazing to watch his transformation from day one to the day he left," O'Connor said. "His English got better."

O'Connor agrees with Myers Jaffe that Americans need to change their paradigms on access to energy – "but, you cannot be prescriptive," he added. "You can't tell people what to do. Over time, you can present issues and a series of options with associated costs."

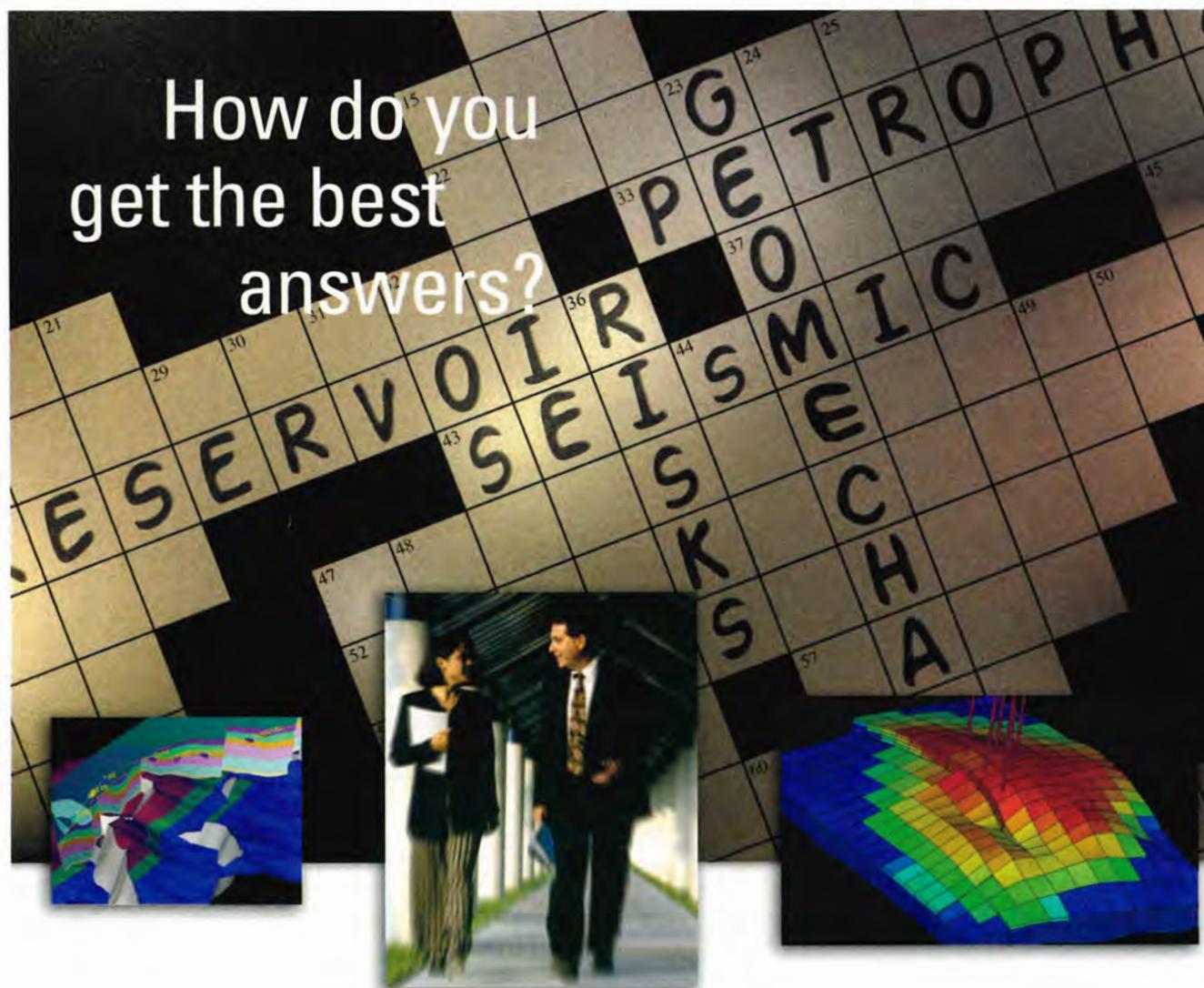
Despite the fact that many American E&P firms had left the continental United States, he said, "There's plenty of hydrocarbons in the United States – it's just a question of cost."

O'Connor also called for a domestic energy policy that would meet the nation's future demands.

O'Connor said that OPEC stopped being a cartel during the 1970s oil crises, with the emergence of Alaskan North Slope and North Sea oil.

"As a cartel, it's been difficult to police," he said. "Many OPEC countries are actively trying to dodge the quota system."

O'Connor described OPEC instead as a "blunt tool" to increase and decrease production that has little control over the global market. "OPEC controls only 25 of the 75 million barrels sold in the marketplace daily, he said. □



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*Geologists Should Demonstrate Value*

# Unorthodox Plays Can Muddy Roles

By KATHY SHIRLEY  
*EXPLORER Correspondent*

The role of geology is fairly well-defined in conventional oil and gas plays, but emerging unconventional gas plays have muddied the waters.

In what is often perceived as an engineering play, the question is raised: In continuous-type gas plays, what is the role of the geologist?

The short answer, according to two geologists who presented a paper on the topic at the annual meeting in Dallas, sounds a lot like "carpe diem."

It is up to geologists to carve out their responsibilities and prove how geology can economically impact these plays, according to Jeffrey Levine, a consulting geologist in Richardson, Texas, and Creties Jenkins, with DeGolyer and MacNaughton in Dallas.

"Since controls on production rates are reasonably well established for conventional gas production, we pretty much know what to look for and what to measure," Jenkins said. "However, with unconventional continuous reservoirs it may require years before productive potential is fully realized.

"As a result, geologists too often end up working from a defensive position regarding his or her contribution," he added, "and all too often with insufficient data to back them up."

Also, these unconventional reservoirs are often geologically complex, leaving geologists with multiple working hypotheses regarding controls on production.

"Management sometimes regards this as being indecisive, which puts us in a very difficult position," he said. "I have worked on projects where managers cynically perceive geologists as problem finders rather than problem solvers.

"This is unfair, but rather than complain we need to be able to clearly show the importance of an accurate, thorough geological analysis," he said.

The two contend that finding and exploiting continuous-type gas accumulations requires the simultaneous application of accurate geological interpretations and effective engineering technology.

As they wrote in a paper presented at the AAPG Annual Meeting in Dallas:

*"That link is well established in conventional gas systems where reservoirs are localized features with discrete boundaries. Continuous-type gas accumulations, however, are regional in extent and lack obvious seals or traps.*

*As a result, the geological factors controlling gas-in-place and production rates can be difficult to identify and quantify. This can lead to the erroneous assumption that the reservoir is too complicated to characterize, or that*

Jeffrey Levine and Creties Jenkins received an EMD President's Certificate for Excellence in Presentation for their paper "What is the Role of the Geologist in Assessment of Continuous-Type Gas Accumulations," presented at the recent annual meeting in Dallas.

The EMD Frank Kottlowski Memorial Award for best EMD paper at the meeting went to H. Todd Schaefer, B.P. McGrail and S.P. Reidel for "Geologic Sequestration of CO<sub>2</sub> in Basalt Formations."

*"... good geological work is disregarded because companies are entrenched in a culture that makes decisions based on non-geologic issues."*

*heterogeneities are uniformly distributed and, therefore, can be approximated with simple models.*

*"Even worse is the assumption that*

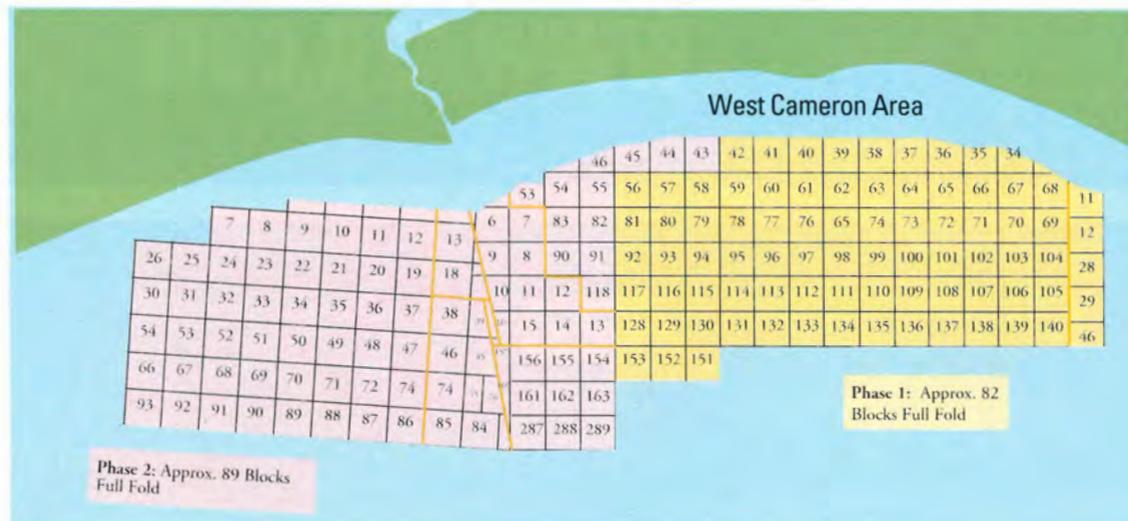
*these reservoirs are 'statistical plays,' which allows companies to rationalize and justify their lack of knowledge regarding reservoir geology."*

As a result of these assumptions, many companies emphasize engineering and minimize geology in exploration and development of continuous-type gas accumulations.

"To change this, geologists must do a better job of defining their responsibilities," Jenkins said, "demonstrating why geological knowledge is so important and delivering recommendations that will have a favorable impact on the bottom line."

continued on next page

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# Exploiting the Exploration Mentality

Kent Bowker, co-chairman of the Unconventional Gas technical session at the AAPG Annual Meeting and a lead geologist for Mitchell Energy when Mitchell pioneered the Barnett Shale gas play in the late 1990s, said the most important ingredient geologists bring to continuous-type gas accumulations is their innate ability to think outside the box.

"I made it a priority to learn all I could about the engineering aspects of the project – geologists have to have a working knowledge of those elements to be effective," Bowker said. "But mostly I did what all good geologists do, asking 'what if' and pushing the status quo. I tried to bring the explorationists' way of thinking to an

exploitation effort."

According to Bowker, the most difficult task in developing a shale play is usually not discovering it.

"The primary difficulty is determining an economic technique to develop the play," he said. "The geologist's role is critical to this effort, not so much because of what he knows, but because of the way he thinks."

Geologists should familiarize themselves with drilling techniques, completion methods, reservoir engineering, etc., as these relate to the special challenges of a shale reservoir, he suggested.

"Armed with some working knowledge of these subjects, the geologist can then encourage

engineering teammates to develop and attempt exploitation techniques that they may have otherwise overlooked," he said. "The goal is to get everyone on the team thinking out of the box during the exploitation phase of the project."

"It can be overwhelming for geologists when engineers are running an entire project," Bowker added. "When I came into the Barnett Shale it looked like the geologist's role was just going to be signing off on requests for AFEs. I just jumped in and wasn't afraid to start throwing around ideas."

"It is a brave new world out there. It will be up to geologists to define their role in these continuous-type gas plays."

– KATHY SHIRLEY

continued from previous page

## Barriers to Success

Continuous-type gas accumulations are reservoir systems where gas-bearing strata extend over much larger stratigraphic thicknesses and lateral distances than conventional gas reservoirs. These accumulations include coal gas, shale gas and tight sandstones.

The gas resource in continuous-type accumulations is distributed more or less continuously through the reservoir, although the reservoir quality can be highly variable, both in terms of the resource's density and deliverability.

Levine and Jenkins say that experience in the United States and elsewhere shows that economic gas rates from sorbed gas reservoirs require a favorable combination of reservoir properties, which tends to occur only over a small portion of the entire basin.

"The San Juan and Black Warrior basin coal gas plays and the Michigan Basin shale gas play provide notable examples of narrowly constrained, geologically controlled production fairways which have provided most of the gas production," Levine said. "The challenge facing geoscientists is to identify these trends as early as possible and to work with engineering staff to appraise and develop them efficiently."

Levine said there are a number of reasons why geologists tend to play a secondary role in assessing and developing continuous-type gas accumulations.

"Even if a project manager acknowledges there are geologic questions concerning a play, they may expect an algorithm or standardized form to determine those answers," he said. "We need to recognize, however, that we are still very much on a learning curve for this type of reservoir, and that every prospect presents a unique combination of variables."

"There has to be an element of faith that spending money early in the project to collect basic geologic data will make it possible for geologists to draw inferences and see relationships that will be important down the road."

In many cases geologists have not done an adequate job of generating answers that challenge the status quo and confront misperceptions, both men say – so companies often move forward with minimal geological support and make decisions based primarily on short-term economics.

"Just as often good geological work is disregarded because companies are entrenched in a culture that makes decisions based on non-geologic issues," they said. These issues include:

### ✓ Financial pressures.

"Managers understandably hesitate to burden projects with the up-front costs of coring, logging, testing and analysis," Levine said. "This reluctance to spend money is often shortsighted as the benefits can be realized many times in the appraisal, pilot and development stages."

### ✓ Focus on engineering technology.

Successful development of continuous-type gas accumulations over the past 30 years has been made possible by development of novel engineering technologies. As a result, engineering has taken the dominant role in many projects. But engineering technologies can only affect the near well bore region while production rates

See **Geologist's Role**, page 25



Existing Data	Newly Acquired Data (2004)
8 sec.	13 sec.
100 m	50 m
60	120
Hydrophone	Dual Sensor
6000 m	9000 m



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# Member Drive a Success

The 2003-04 AAPG Membership Enhancement Drive program goal was threefold:

- ✓ Involve the societies and regions.
- ✓ Increase the number of recruiters.
- ✓ Emphasize recruiting Active members.

It worked.

A lot of the emphasis on this contest was the recruitment of Active members, and this included recruiting current Associates to transfer their membership to Active. Bruce A. Falkenstein, Houston, wins the top recruiter prize

without adding a single new member; all 12 of his recruits were upgrades to Active membership.

As winner, Falkenstein will receive his registration, four night's hotel and travel to AAPG's International Meeting and Exhibition in Cancun, Mexico, Oct. 24-27.

Falkenstein, vice president of exploration and geology with Transmeridian Exploration since its founding in 2000, was previously with BP Amoco for 20 years. He was the Houston Geological Society's membership chairman for 1988-90, and is on the MED ad hoc committee.

Of the total 364 recruited applicants during the MED contest this year, 227 are for Active and 137 for Associate, so it seems this part of the goal was accomplished.

Encouraging the Affiliated societies and international regions to get involved was another MED goal, according to MED chairman Dan Smith.

Result? The society participation rate was 76 percent, and all of the regions participated with a total overall of 302 recruiters. This also reflects a lot of members who recruited just one member, thus accomplishing another aspect of the goal, Smith said.

To be eligible for the prize money each society and region had to accumulate recruiter points equal to at least 3 percent of their member count taken at the beginning of the contest last Sept. 1. Six societies and one region qualified.

The winners:

✓ Baton Rouge Geological Society wins first place for the societies, a prize of \$1,250.

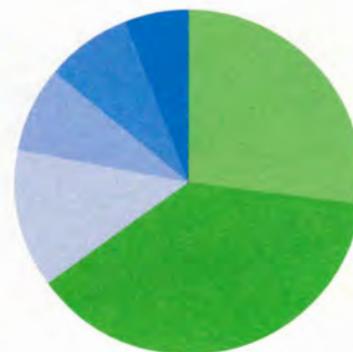
✓ Pittsburgh Association of Petroleum Geologists takes second place, and wins \$1,000.

✓ The Everglades Geological Society takes third place, and the \$500 award. (Congratulations to the Abilene and Alaska societies and the Professional Geologists of Indiana for being in the running.)

Internationally, the Africa Region wins the top prize of \$1,250.

\* \* \*

The 364 recruited applicants for AAPG Active membership came from diverse industry sectors.

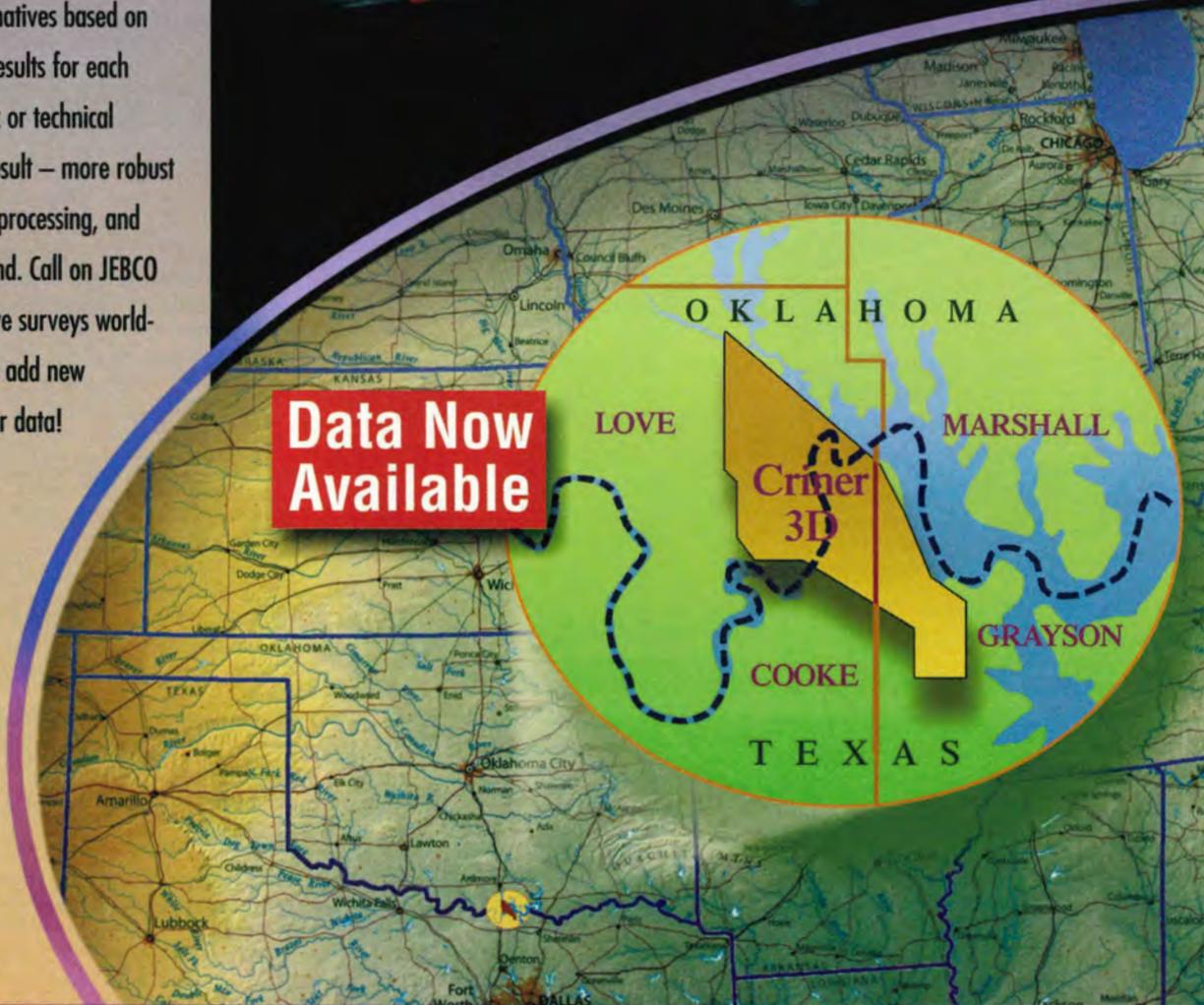
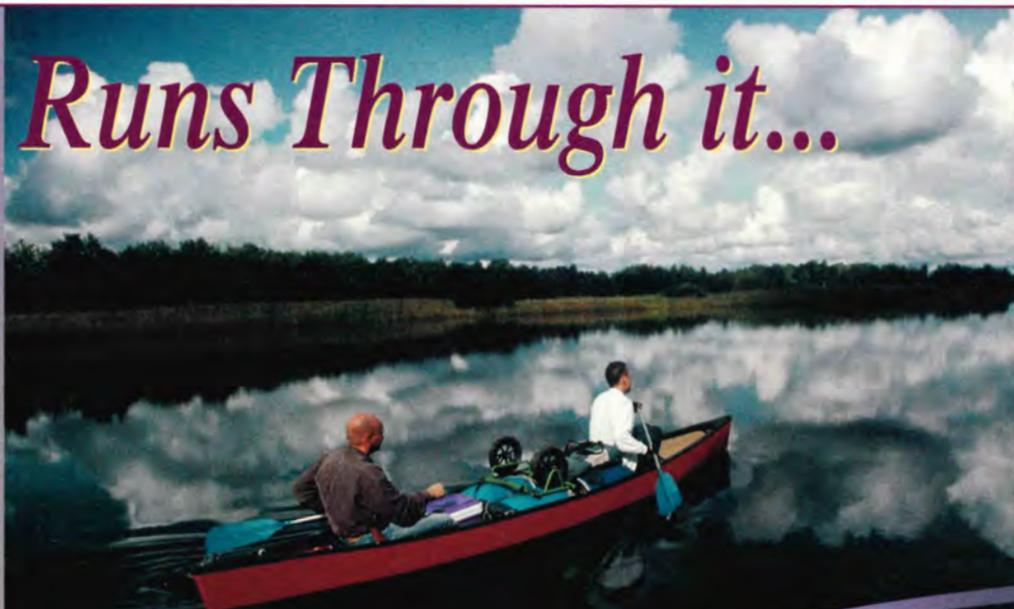


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*New Ideas for New Frontiers*

## Geologist's Role

from page 23

and reserves depend mainly on the quality and distribution of reservoir properties in the interwell areas, Levine and Jenkins said.

Geologists must seek the same kind of support for tackling geological problems as engineers receive to overcome drilling and completion issues, they added.

### ✓ Statistical play syndrome.

Unconventional gas developments typically require hundreds of wells, often on close spacings. The variation in production rates between adjacent wells can be greater than those of conventional gas accumulations due to subtle changes in lithologies, fracturing

and well completion effectiveness. Often companies conclude that these variations are "statistical," meaning they are unpredictable and their distribution can only be known by drilling up the entire reservoir at development spacing.

### ✓ Complexity of sedimentary organic matter.

Sedimentary organic matter plays a critical role in the storage, diffusivity and permeability of sorbed gas reservoirs, which includes coal and shale gas, but "despite its importance, expertise in the sampling, processing, analysis and interpretation of organic matter remains a geological specialty that is not widely held," Levine said.

### The Answer Is ...

So what is the legitimate role of

geologists in these continuous-type gas accumulations?

Levine and Jenkins agree that first and foremost geologists can:

- ✓ Help reduce risk by anticipating trends in reservoir quality.
- ✓ Provide data for optimizing drilling and completion, remediation of production-related problems, reservoir simulation and economic modeling.
- ✓ Accurately assess the distribution of gas in place and improve the accuracy of reserve estimates, target stratigraphic intervals for completion or recompletion and determine optimal well spacing.
- ✓ Be critical in guiding project expansion and acquisition.

But geologists have to carve out their place in the development of these unconventional gas plays; challenging the perception that geology isn't

important is just one part of the hurdle. Often geologists completely unfamiliar with coals or shales are asked work these plays, but they don't have sufficient background.

"It is intimidating and difficult to be thrust into this type of situation and be expected to provide answers on something you aren't familiar with," Levine said. "So, education is the first critical step for any geologist asked to work continuous-type gas accumulations."

"I am relatively new to unconventional gas," Jenkins added. "I started working these plays in 1997, and the first thing I did was read papers and contact key people with experience in the field. I knew it was up to me to learn as much as I could so I could be an important part of the process." □

## Guidelines

from page 6

agreement of each nominee to abide by this policy shall be a condition of candidacy.

2. The president, upon notification by the chairman of the Nominating Committee that the slate of candidates has been filled, shall transmit to each candidate two copies of this policy. Each candidate shall immediately sign and return to the executive director one copy indicating the candidate's acceptance of and agreement to comply with the terms of this policy.

3. This policy shall be published annually in the AAPG EXPLORER, in order that the membership of the Association be informed. The AAPG headquarters staff shall maintain scrutiny of its own operations to ensure compliance with the spirit and the letter of this policy.

### C. Enforcement

1. Charges of violations of this policy must be filed in writing with the executive director by an Active AAPG member. The executive director shall report the charge to the Executive Committee. Upon a report to the Executive Committee of a charge of a violation of the policy, the following actions shall be taken:

□ The Executive Committee will review the charge and if the Executive Committee determines that it is likely a violation has occurred, will send notice to the candidate charged, setting forth the charge and the time and place at which the candidate may personally appear before a representative appointed by the Executive Committee for a hearing on the charge. The candidate shall respond in writing within 10 days from the date the notice is sent.

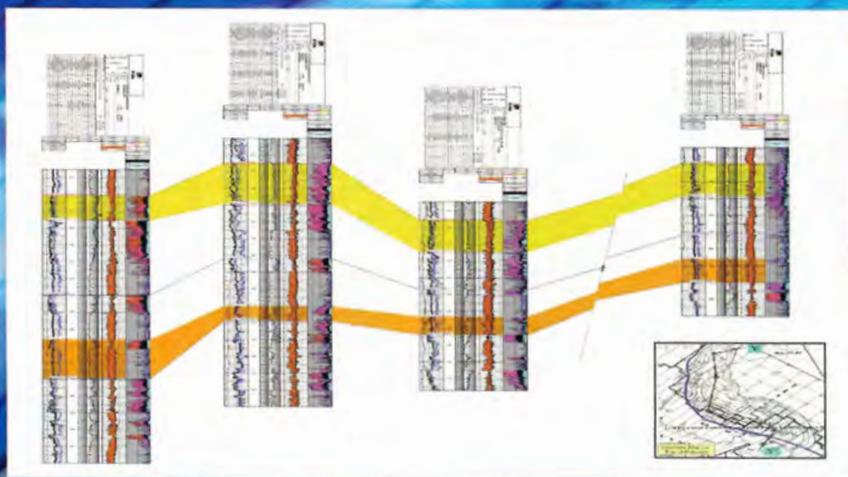
□ The Executive Committee shall, within 10 days after receipt of a timely written response, if any, from the candidate charged, or within 10 days after hearing, whichever is later, render its decision as to whether a violation of this policy was committed by the candidate. Failure to make such a decision and to immediately thereafter notify the candidate charged shall be considered a finding that a violation did not occur.

□ Upon the finding of a first violation, the president shall immediately send a written admonition and warning to the candidate charged.

□ On each subsequent finding of a violation, the Executive Committee shall impose a penalty upon the candidate ranging from reprimand to disqualification as a candidate in the current election. □

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Following completion of the Petcom purchase, Fugro-Jason has been aggressively addressing both short- and long-term plans for the future development and support of **PowerLog**.

The **PowerLog** development work will be driven by the following priorities:

- Positioning the software as a tool for both **generalist** and **specialist** petrophysicists and geologists
- Continuing and **expanding support** for **PowerLog's** current user community
- Advancing direct data links to third-party software such as Openworks, Geoframe and Petra
- Making **PowerLog** available on both Windows® and Linux/Unix platforms
- Including Fugro-Jason's **Rock Physics** functionality (**Largo**) necessary for advanced reservoir characterization.

Mike Barnett and Doug Schmidt (Petcom's founders and principals) will continue to manage the Dallas-based development team. They will be supported in general by Fugro-Jason's Rotterdam research and development group and specifically by the Rock Physics team.

In addition to expanding software functionality, **PowerLog** users will benefit from the Fugro-Jason support network of petrophysicists based in the Fugro-Jason offices around the world. Fugro-Jason has been using **PowerLog** and **Largo** in its consultancy services business since 2001.

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## Licensing Issues?

# Law of the Sea Coming to Be

By KATHY SHIRLEY  
*EXPLORER Correspondent*

Since man first took to the seas, territorial disputes have raged over the world's oceans. Often, maritime laws grew out of custom – if there were no objections to a practice then it became the norm. Eventually, the norm became law.

All that changed in the 1900s, however, when the world went to war, and for the better part of a century, officials have struggled with just how to carve up the seas.

With resources such as oil and gas being found in deeper waters, the struggle carried an increasingly important price tag.

Which brings us to 1982, and the United Nations' Convention on the Law of the Sea, a regulatory framework for the definition of rights and responsibilities of coastal states on maritime areas that has resulted in what some officials call among the largest legitimate land grabs in the history of maritime space.

Chris Carleton, head of the Law of the Sea Division at the United Kingdom Hydrographic Office, tracks the roots first to the League of Nations, which in the early part of the century tried to deal with the subject. Nothing much came of it – then.

"The requirement for a codification of international maritime law was again recognized during World War II, and one of the first actions by the newly formed United Nations was to task the International Law Commission to look at the codification of international law in this area."

"From this study the first U.N. conference on the law of the sea took place in Geneva in 1958. This resulted in four conventions, two of which – the Convention on the Territorial Sea and Contiguous Zone and the Continental Shelf Convention – recognized that states had a right to maritime space and to explore and exploit the resources. These conventions were the first codification of international maritime law."

"This convention didn't say how wide these territorial waters were, but it did legitimize claims to a territorial sea," Carleton said. "The Continental Shelf Convention also said a state was entitled to a seabed beyond its shores, and the wording of the 1958 convention set that limit at 200 meters 'or as far as could be exploited.'"

"At that time the capabilities to exploit the seafloor to 200 meters didn't exist," he added, "much less beyond that limit."

### The Rules of the Game

Under the rules of the 1982 UNCLOS, countries have 10 years following ratification of the convention to make a claim to its extended continental shelf via the Commission on the Limits of the Continental Shelf.

Currently 145 states have ratified the agreement. The United States, which is in the process of ratifying the agreement, is

continued on next page

## Cold War Pursuits Intensified Maritime Ownership Issues

The need for comprehensive maritime ownership laws came to a head in the late 1960s, when manganese nodules were discovered on global deep ocean floors. These nodules contained magnesium, copper, minerals and some very valuable hard metals that were extremely useful in the Cold War for use in missiles and rockets.

As a result, the U.N. General Assembly passed a resolution establishing deep ocean resources as a benefit for all of mankind.

"That was the seed for the third U.N. convention on laws of the sea in 1972," said Chris Carleton, head of the Law of the Sea Division at the United Kingdom Hydrographic Office.

"This conference spanned a 10-year period and included all the nations in the U.N., including land locked countries, which were given rights to the resources of the world's seas."

Issues such as navigation, economic zones, resources of the deep oceans, transfer of technology and scientific research were studied, debated and decided over the next 10 years, and by 1982 a comprehensive set of laws was established.

Unfortunately, by the early 1990s none of the industrialized nations had ratified the convention.

"The convention was originally written under the government-owned model, which meant it was a big operation run by the U.N. through a huge seabed authority," Carleton said. "By the 1990s

that wasn't going to work, so the U.N. had to change that aspect of the program without changing the tenants of the convention."

The result: The United Nations Convention of the Law of the Sea came into power in 1994, covering a wide array of maritime issues.

Among those issues is article 76, "Definition of the Continental Shelf." This article requires action from coastal states to secure maximum territorial advantage and resource potential, and provides technical guidance in the process of claiming continental shelf beyond 200 nautical miles if there is a "natural prolongation" of the coastal state's landmass outside of that distance.

The section describes how the outer limit of the continental shelf may be defined according to the position of the foot of the continental slope and either geodetic measurements or patterns of sediment thickness variation oceanward of the slope.

Bathymetry charts of the world's oceans margins suggest many shallow areas of seafloor may readily constitute "natural prolongations," since they developed along rifted passive margins during break up.

Also, volcanic ridges, which form an intimate component of a continental margin, and local sediment thickness anomalies, such as deltas and fans, are likely to constitute "natural prolongations."

– KATHY SHIRLEY



Meeting Set Sept. 14-16

# APPEX – Get Smart, Buy, Sell Your Deals

Online registration is now available for a meeting that could change your life.

AAPG's fourth annual Prospect and Property Expo – known widely by the popular acronym "APPEX" – will be held Sept. 14-16 in Houston at the George R. Brown Convention Center, offering geoscientists the chance to buy, sell and trade their work in a professional marketplace.

Already applauded as a "can't miss" meeting for those with geologic ideas and deals to sell, APPEX is adding new features this year to give attendees even more opportunities for success.

Among those features is a "Perspectives on the Upstream Business of Oil and Gas" forum, sponsored by IHS Energy, around the theme "The Exploration Dilemma: What is the Role for Exploration in the Energy Future?"

The forum, set from 8:30 a.m. to 4:30 p.m. on Tuesday, Sept. 14, will address issues such as financial markets, technology, regulations, politics and policies, and is organized into three sessions:

□ Global exploration opportunities, discovery trends and directions – Experts and executives from various company sectors will discuss industry directions, and will assess risks and



rewards to stimulate increased international exploration investments.

□ North American exploration outlook – Executive views of challenges, opportunities and policy issues.

□ Investment opportunities.

The forum is the lead-up, of course, to the expo itself, which begins with an Icebreaker at 4:30 p.m. on Sept. 14 and offers the opportunity to find and/or sell ideas, prospects and property.

Other APPEX highlights include:

- ✓ A "power lunch" on Tuesday, Sept. 14, featuring a talk on international exploration experiences and opportunities.
- ✓ A SIPES/HGS/AAPG short course, "Packaging and Selling Your Prospect:

continued on next page

## INTERNATIONAL BULLETIN BOARD

(Editor's note: This column is for international items of note to the AAPG.)

News items, press releases and other information should be submitted to the EXPLORER/International Bulletin Board, P.O. Box 979, Tulsa, Okla. 74101; telephone – 918-560-2616; fax – 918-560-2684; or e-mail – [dfree@aapg.org](mailto:dfree@aapg.org).

This report on the international aspects and potential of AAPG's annual APPEX Prospect and Property Expos, held on both sides of the Atlantic Ocean, was prepared by Jeff Lund, APPEX Advisory Committee chair.)

On Sept. 14-16 the fourth APPEX Prospect and Property Expo to be held in Houston will be convened by AAPG, SIPES and HGS. APPEX-Houston follows the highly successful APPEX-London held last March and described by Steve Veal in this column in the May EXPLORER.

Holding APPEX events twice a year, on each side of the Atlantic, is unique and is a key strategic feature aimed at fulfilling the APPEX Mission, which is to:

*"Establish U.S. and international market places for the exchange of oil and gas prospects and producing properties, which are driven by geoscience fundamentals as well as business opportunity."*

I believe a trend we will see – and should encourage – is an increase in the non-U.S. content of APPEX-Houston. Non-U.S. companies, including vendors of E&P services, E&P operators and even an occasional

national oil company, are a small but growing component of APPEX-Houston.

A key phenomenon to keep in mind is the dynamic of management decision-making in E&P; management decisions on many "international deals" are made in Houston offices, even if the company has a European office or consultant!

The current blossoming of opportunity in the UK North Sea is a good case in point.

Newly formed, entrepreneurial prospect generators are springing up in the United Kingdom and elsewhere in Europe. Many Houston-based E&P operators already have entered the North Sea arena and would certainly welcome the opportunity to review deals at Brown Convention Center, sparing the need for a trans-Atlantic trip!

Could there be European-based E&P companies interested in reviewing U.S. prospects in London? Mexican food is harder to find, but the pubs are great for deal-making!

I believe the increasing globalization of our industry will naturally lead to a dramatic synergy between the two APPEX events. I salute the companies who already have seen this opportunity – Challenger Minerals and Carrizo Oil and Gas come to mind – and have pioneered showing North Sea opportunities in Houston.

Those of us involved in organizing APPEX in either city encourage you to think about the possibilities – and tell us how we can help! □

## Namibia's Fourth Licensing Round

The Ministry of Mines and Energy is pleased to announce that Namibia's Fourth Petroleum Licensing Round will be held from the 1st September to 30th November 2004. The round will cover selected blocks in the Orange and Walvis Basins.

- > Over 4,300km of seismic data acquired in the Orange and Walvis Basins in 2003 by Veritas DGC is now available.
- > The existing Kudu and Ihubesi fields in the Orange Basin and the huge Ondjou prospect in the Walvis Basin make this an area of exciting prospectivity.

> Petroleum law changes submitted to Namibia's parliament in 2004 will make marginal prospects more attractive to foreign investors.

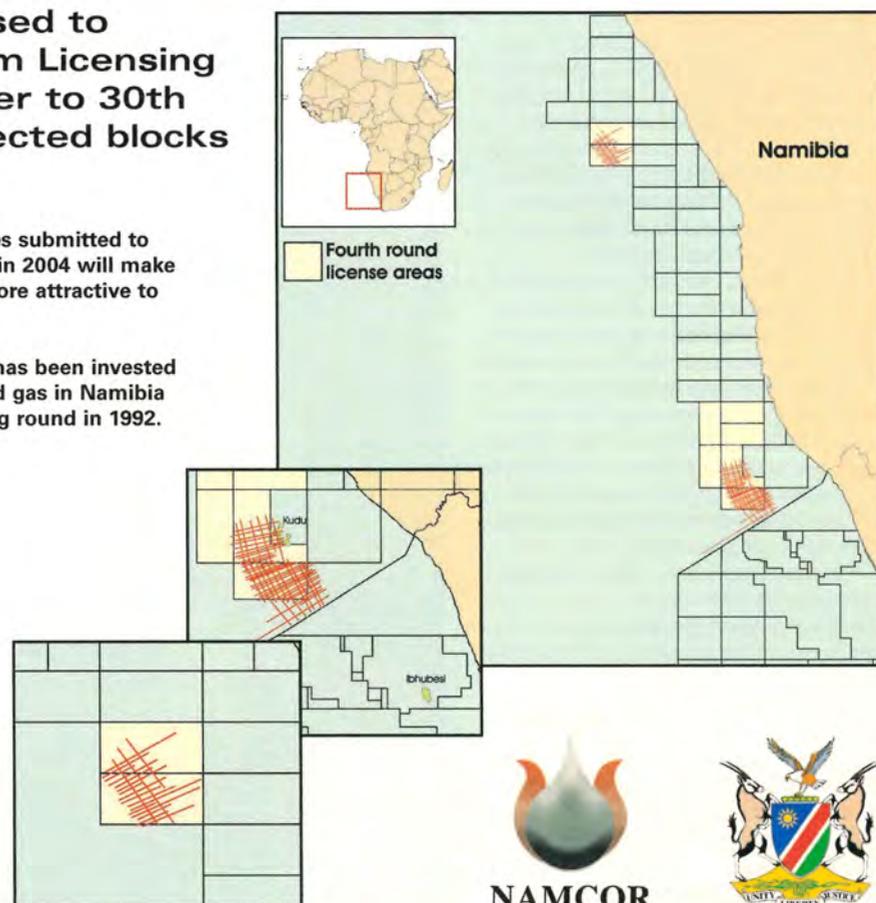
> Over US\$500 million has been invested in exploring for oil and gas in Namibia since the first licensing round in 1992.

Promotion seminars will be held in London (9th September) and Houston (13th September) for the licensing round.

For further information please contact:

Mr Immanuel Mulunga,  
Petroleum Commissioner, Ministry of Mines and Energy, +264 61-2848111  
or

Mr Joe Vatanavi Mazeingo,  
Managing Director, NAMCOR, +264 61-2045000



Meeting Begins Oct. 24

# Technical Program Ready for Cancun

The technical program is in place and the time to register has arrived for an international event that has huge benefits for all.

This year's AAPG International Conference and Exhibition, sponsored jointly with the Mexican Association of Petroleum Geologists, will be held Oct. 24-27 in Cancun, Mexico.

The site for all activities is the Cancun Convention Center, featuring a nearly 30,000-square-foot ballroom that will house the large exhibits area.

The meeting's theme is "Petroleum Industry in the 21st Century: Technology, Business and Frontiers," which will be explored through field trips, short courses, special talks and a technical program that features more than 340 presentations.

The technical program – details of which are now available in print and online – is divided into six themes:

- **Deep Water Exploration, Development and Production** – Six sessions dealing with the latest developments from the areas of Gulf of Mexico, Angola, Brazil and other regions.
- **Geology and Seismic Interpretation** – Six sessions devoted to imaging, interpreting, modeling and understanding subsurface geology from seismic data.
- **Mexican Basins and Beyond** – Three sessions focusing on the host country's basins, prepared by AMGP, the host society, plus looks at the remaining potential of the Americas.
- **Management and Strategy** – Six special sessions, which include "management forums" featuring industry leaders; independents' perspectives; a student session; and reviews of risk and portfolio management.
- **Beyond Conventional Petroleum** – Three special sessions on impact structures, environmental and gas monetization topics.

□ **Exploration and Production Concepts and Technologies** – Nine sessions, including two provided by the SPE, on production and remote control, drilling practices, IT, carbonates, fractures, heavy oil and mature basins and fields.

Two special luncheons also are planned for the meeting:

✓ On Monday, Oct. 25, Luis Ramírez Corzo y Hernández, general director of Pemex, will discuss Pemex's role in the 21st century oil industry.

✓ On Tuesday, Oct. 26, Pilar Luna Erreguerena, head of underwater archaeology at the National Institute of Anthropology and History of Mexico, will discuss "Underwater Archaeology: A New Vision of the Past."

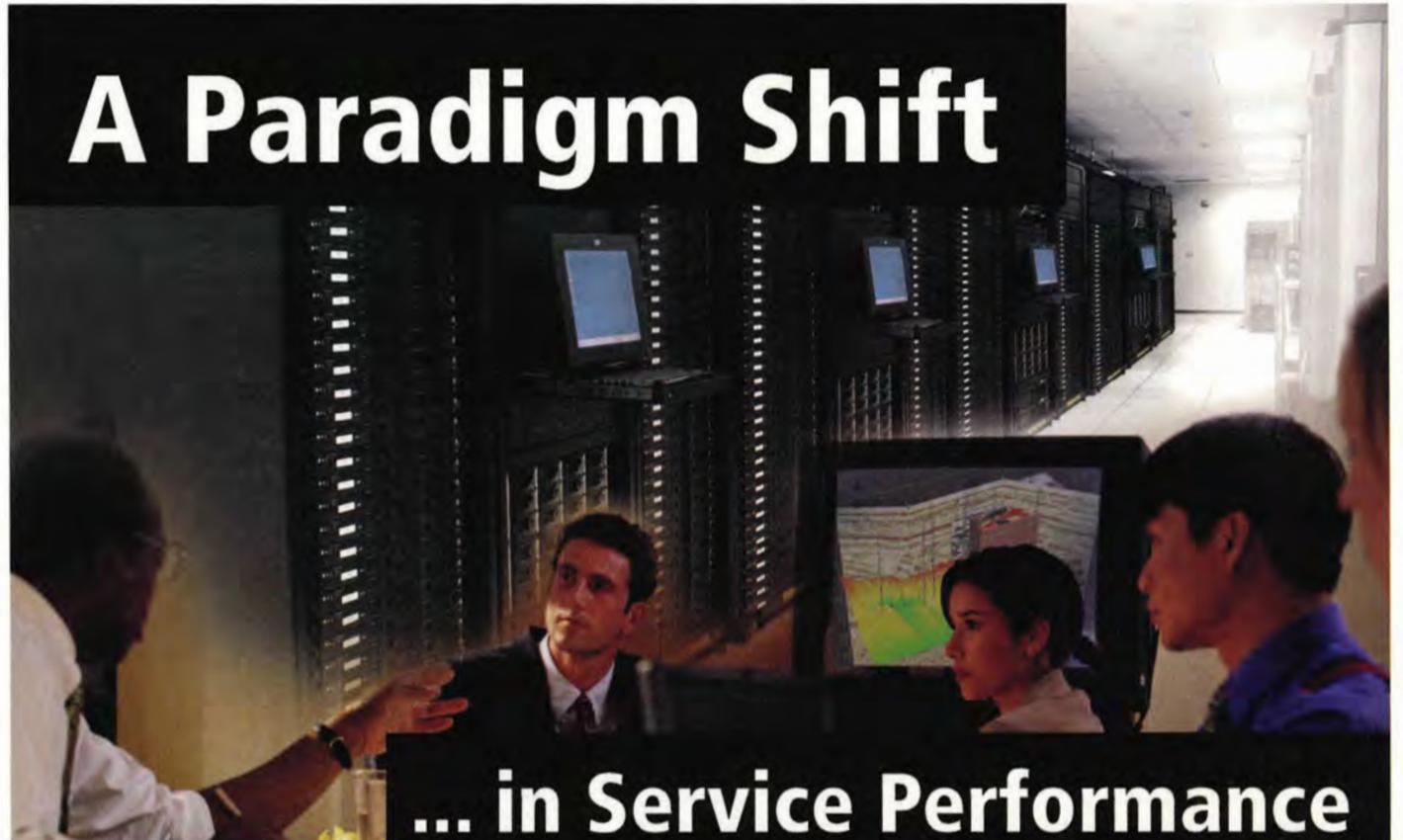
The preregistration deadline is Sept. 23. Registration and updated meeting information are available online at [www.aapg.org](http://www.aapg.org). □



Photo courtesy of Cancun Conventions and Visitors Bureau

The technical program for the AAPG international meeting in Cancun is large, diverse and challenging – and the area's recreational appeal rates high, too.

## A Paradigm Shift



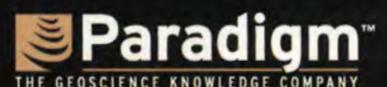
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- Reservoir Characterization and Petrophysics
- Well Planning and Drilling

continued from previous page

Geoscience, Land and Financial Return – A How-To Guide for Presenting Prospects to Management and Investors," to be held from 1-5 p.m. on Thursday, Sept. 16.

✓ A "mini-breaker" at 4 p.m. on Wednesday, Sept. 15.

✓ Continental breakfast available on both Sept. 15-16.

Blocks of rooms are being held at the Holiday Inn and Hilton Americas, available through Aug. 13.

Best of all, registration and further updated information – about both attending or securing space on the exhibit floor – can be found online at [www.aapg.org](http://www.aapg.org). □

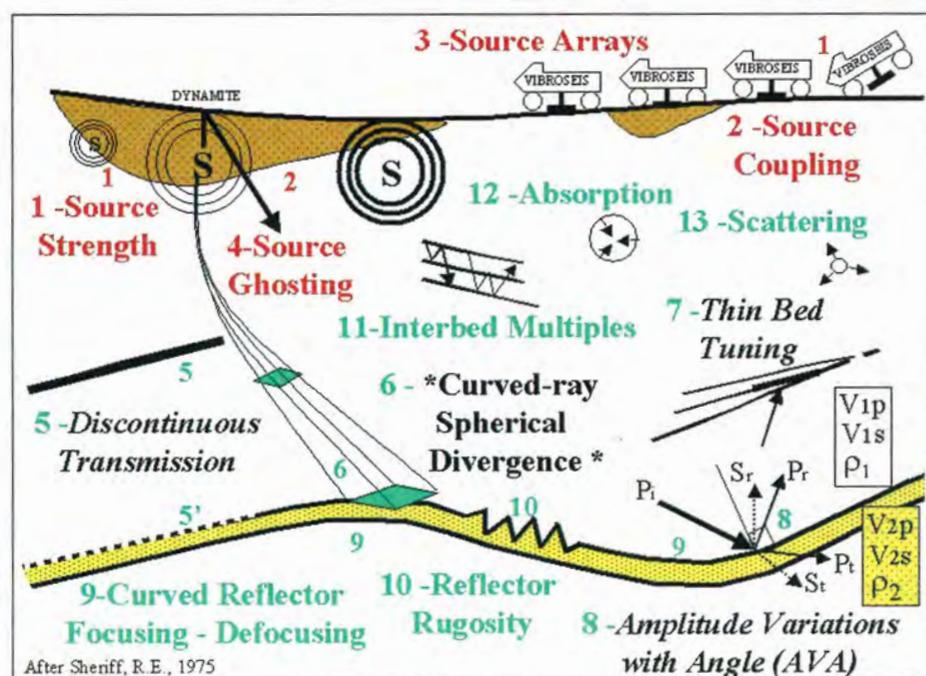


Figure 1 – Factors affecting amplitudes are shown in red for the sources, and cyan for those in the earth. Numbers refer to Table 1 (below), where black lettering (F5-F8) indicates increased importance.

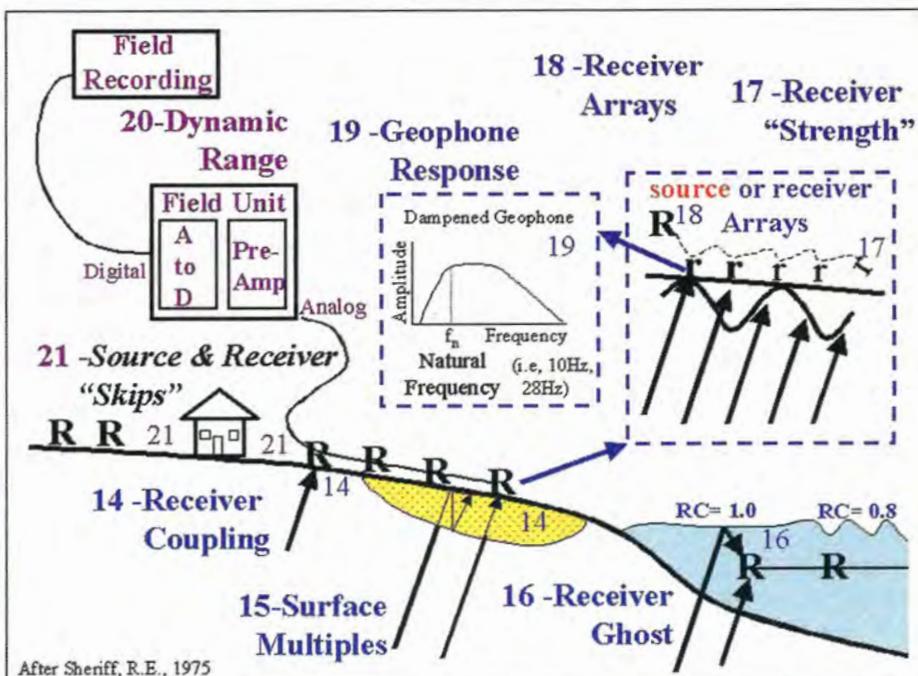


Figure 2 – Factors effecting amplitudes are shown in blue for the receivers, and violet for the recording systems. Numbers refer to Table 1, where black lettering (F21) indicates increased importance.

**GEOPHYSICALCORNER**

# Understanding Seismic Amplitudes

(The Geophysical Corner is a regular column in the EXPLORER, edited by Dallas consulting reservoir geophysicist Alistair R. Brown. This month's column is the first of a two-part series.)

By STEVE HENRY

Seismic interpretation is fundamentally based on interpreting changes in amplitude.

The changing amplitude values that define the seismic trace are typically explained using the convolutional model. This model states that trace amplitudes have three controlling factors:

- ✓ The reflection coefficient (RC) series (geology).
- ✓ The seismic wavelet.
- ✓ The wavelet's interactions through convolution.

Large impedance (velocity x density) contrasts at geologic boundaries will generally have higher amplitudes on the seismic trace.

Interpreters associate changes in seismic amplitudes with changes in the geology; this is a good assumption only if all of the factors that affect trace amplitudes have been considered.

Part 1 of this paper presents the major effects that interpreters need to understand about seismic acquisition, where the wavelet is generated and the field trace recorded, and the interaction of the wavelet with the geology. Part 2 will discuss the factors effecting amplitudes in seismic processing and interpreter controls on the workstation (loading, processing and display).

When all these factors have been considered, then the changes in amplitudes can be more reliably related to changes in geology.

Over 20 factors that affect amplitudes, before seismic processing, will be presented. The magnitude of most of these can only be estimated, and removing their effects to obtain absolutely true amplitudes is impossible. Fortunately, relative changes in amplitude have been shown to be adequate, and have been successfully applied for reducing risk, such as direct hydrocarbon indicators, estimating lithofacies, etc.

The factors affecting amplitudes are illustrated here in figures 1 and 2. A

checklist with brief comments describing the factors, along with an estimated magnitude of the effect is provided in table 1.

Although only the moderate and major effects are discussed below, it is important to keep in mind how the amplitudes are being used in the interpretation. If a well is being proposed based solely on an amplitude anomaly, even a minor to moderate effect would need to be examined, as it could have a significant impact.

The five factors that have a big effect on amplitudes during the acquisition of field data are shown in black lettering on figures 1 and 2.

The most important of these factors is the loss of energy due to curved-ray spherical divergence (F6). This effect on amplitudes is often approximated by the inverse square of distance, which for constant velocity is the inverse square of time. This factor is smaller for reflectors

that are separated by less time, and minor for most lateral changes. For the real, non-constant velocity earth this effect is greater ( $1/v^2t$ ), but still inadequate for recovering true amplitudes of deep reflectors.

Laterally discontinuous (F5) high impedance geologic features can greatly reduce the amount of energy transmitted to the underlying geology.

continued on next page

Factors	Comments:	Magnitude
<b>Seismic Acquisition (Source)</b>		
F1) Source Strength	Size of dynamite, number of working vibrators, number of sweeps, etc.	Moderate
F2) Source Coupling	Source in dry sand, weathering (poor coupling), bedrock, wet soil (good)	Moderate
F3) Source Arrays	Designed to attenuate noise but also attenuates dipping primaries	Minor
F4) Source Ghost	Reflected signature with opposite sign at free surface	Minor
<b>The Earth</b>		
F5) Discontinuous Trans	When RC large enough (Volcanics, Salt) underlying events not visible	<b>Mod-Major</b>
F6) Curved Ray	Spherical spreading of energy is the <b>MAJOR</b> effect, <b>factor of 10</b> or more	<b>MAJOR</b>
F7) Tuning	Tuning can be major, up to <b>factor of 2</b> , at pinchouts can be down to zero	<b>Mod-Major</b>
F8) AVA	AVA gas effects can be up to a <b>factor of 5</b>	<b>Mod-Major</b>
F9) Curved Reflectors	Focusing and defocused - minor, exceptions include salt lens - mod-major	Minor
F10) Rugosity	At seismic wavelengths most geologic surfaces are "mirror" smooth	Minor
F11) Interbed Multiples	If RC contrasts are high then can be moderate problem, generally minor	Minor
F12) Absorption	Loss of energy to heat, weighted towards high frequencies	Minor
F13) Scattering	Loss of energy due to specular reflections, weighted towards high frequency	Minor
<b>Seismic Acquisition (Receiver)</b>		
F14) Receiver Coupling	Geophones dampened on dry soil, buried or wet soil couples well	Moderate
F15) Surface Multiples	Negative RC at surface, then positive at base weathering	Minor
F16) Receiver Ghost	Reflected RC with opposite sign at free surface, changing surface RC	Minor
F17) Receiver Strength	Poorly placed geophones, partial loss of array	Minor
F18) Receiver Arrays	Designed to attenuate noise but will also attenuate dipping primaries	Minor
F19) Geophone	Response is a filter that reduces amplitudes	Minor
F20) Dynamic Range	Pre-1990 with limited 12-15 bit recorders / filters Moderate, now Minor	Minor
F21) S&R "Skips"	Missing ground positions / offsets, effects # traces and frequency content	<b>Mod-Major</b>

Table 1. This table provides a checklist of factors that affect amplitudes. Factors in bold are more important.

continued from previous page

This reduces the amplitude of otherwise high amplitude reflectors beneath and over a lateral distance of half a spread length off the sides of the anomaly.

In extreme cases (e.g. salt, volcanics) the amplitudes of underlying reflectors can be reduced to below the noise level and disappear from the data.

Tuning (F7) occurs when the separation between RC creates constructive or destructive interference of the wavelet's center and side lobes. This interference can increase or decrease amplitudes, and is most evident in areas of geologic thinning such as angular unconformities or stratigraphic pinch-outs. The magnitude of this effect can be major, but normally does not exceed a factor of 1.5 as determined by the size of the side lobes.

Amplitude variations with angle (AVA or AVO) relate relative amplitude changes (F8) in pre-stacked data to combined rock and pore-space fluid properties. This effect can be large for some gas effects. The appearance of this offset-dependent variation will be much less apparent on the stacked trace that contains the summation of all offsets.

Overall on the final stack, AVA effects are in the range of a factor of 2-5 compared to no AVA.

The placement of sources and receivers on the surface of the earth is not always uniform, resulting in missing ground positions (F21) that can have a moderate to major effect on amplitudes. Often, buildings, platforms, lakes, rivers, etc., must be avoided, stations are skipped and traces will be missing from the stacking bin. This reduces the ability of stack to reduce random noise – but the greater effect is a frequency unbalancing.

\* \* \*

This paper is intended to provide the interpreter with a checklist of the factors that should be considered when associating amplitude changes on the seismic trace with changes in geology. Of these 21 factors, five are more important.

Compensation for curved ray spherical divergence is one of the primary goals of seismic processing. The other four factors mentioned above remain in the seismic data, as they are not normally corrected in seismic processing – which will be discussed next month.

*(Editor's note: Steve Henry is an AAPG member with GeoLearn in Houston. His e-mail is geolearn@aol.com)*

## LOOKING BACK

# Are We Going to Get This One Right?

By MARLAN DOWNEY

Gas prices of \$6 per thousand cubic foot and oil prices of \$40 a barrel are suggesting to executive accountants that more production could make more money. It is an intriguing concept that is beginning to be talked about in corporate board rooms: Perhaps money could be made in the petroleum business by investing in exploration and development?

As one who has participated in the boom/bust cycles of the past 50 years,

I can point out that history provides some cautions.

Any fool can cut costs; damn few people know how to make money by wise investing. Is your executive suite really up to the new challenge?

You can't make money if you overestimate worth and future revenues of new projects. Wishful thinking is how fools daydream.

Beware of buying another company at a 30 percent premium over market, and immediately claiming profitable

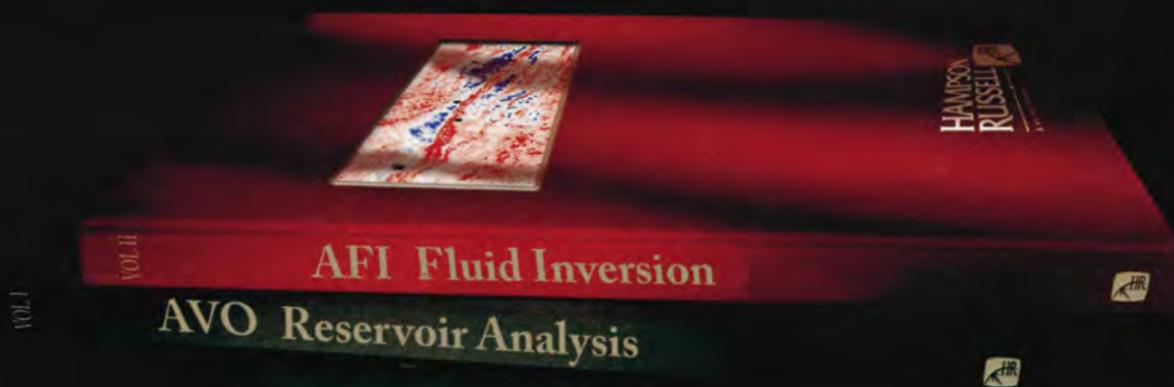
synergies and cost savings. As we say in Texas, "It ain't a-going to happen, Bubba."

Remember that Persistence is a virtue; Patience is a girl's name.

\* \* \*

And, if the world is really giving us another oil boom, say ... thanks, Lord! And promise not to screw it up again. □

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**Mark L. Gaby**, to senior staff

geologist, Vintage Petroleum, Tulsa. Previously senior geologist, Samson Resources, Tulsa.

**Paul F. Hoffman**, to chief operating officer, Cox & Perkins Exploration, Houston. Previously geologist, Cox & Perkins Exploration, Houston.

**Robert P. Murphy**, to president and chief operating officer, Remington Oil and Gas, Dallas. Previously chief operating officer, senior vice president-exploration and production, Remington Oil and Gas, Dallas.

**David Naas**, to advising geologist-Texas shelf group, Devon Energy,

Houston. Previously advising geologist, Unocal, Sugar Land, Texas.

**Eugene Sabalbuero**, to curriculum development and senior trainer-drilling technology, Pathfinder Energy Services, Houston. Previously technical instructor, Halliburton Energy Services, Houston.

**Steve Slawson**, to worldwide petrotechnical solutions manager, Occidental Oil and Gas, Houston. Previously worldwide data acquisition manager, Occidental Oil and Gas, Houston.

**Ken Yeats**, to staff geologist, Nigeria-Mid Africa BU, ChevronTexaco, Bellaire,

Texas. Previously senior geologist, Indonesia BU, ChevronTexaco, Duri, Indonesia.

**Ray Young**, to senior associate, Rose and Associates, Dallas. Previously chief geologist, Santos USA, Houston.

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

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It's **false** that the Plan provides a second honeymoon as well.

**IN MEMORY**

- Allen, Phillip Hayes, 63  
Sugar Land, Texas, April 28, 2004
- Baptist, Oren Cecil, 91  
San Rafael, Calif., April 18, 2004
- Burton, Bill J., 80  
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- Flugel, Erik, 69  
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- Jones, Garry Davis, 51  
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- Loomis, Frederic Brewster Jr., 89  
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- Myers, Sidney Glenn Jr., 77  
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- Reinemund, John A. (AC '54)  
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- Shirley, Jack William, 74  
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- Suprpto, Adi, 59  
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- Taylor, Ira Daniel (AC '54)  
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- Truman, Robert B. II, 60  
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April 28, 2004
- Turnbull, Wade, W., 88  
Houston, April 23, 2004
- Turner, Johnathan Douglas, 92  
Evansville, Ind., Feb. 11, 2004
- Willette, Paul Douglas, 55  
Plano, Texas, May 2004

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



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# Make Your Cancun, APPEX Plans Online

By JANET BRISTER  
*Web Site Editor*

Now that summer is here many people are thinking vacation and budgets – both of which factor into training needs and meeting registration.

About 100 people already have registered for this year's AAPG International Meeting in Cancun, set for Oct. 24-27 – and even though it might seem a bit early to be doing this, in fact the timing may be just right.

After all, registrants don't have to sweat making their meeting arrangements due to AAPG's online registration service.

Of course, Cancun isn't the only AAPG meeting for which you can register online. APPEX-Houston is just around the corner; the meeting will be held Sept. 14-16, but online registration for the meeting will close in mid-August.

Viewers who want to simply attend the prospect expo may sign up online, as well as those who wish to present a prospect during the meeting.

Online registration is fast and easy. It assures your information is current and accurate.

One tip that will help you quickly complete your registration process is to browse through the meeting's options, note the functions in which you wish to participate and then enter the online registration area. Set your credit card out so when you are prompted for that detail you have it as well.

Good browsing! ☐



## AAPG Online Registration

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AAPG Prospect & Property Expo**  
September 14-16, 2004  
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## SPOTLIGHT ON EDUCATION

Summer is a season of discovery via fantastic AAPG trips that visit three regions to study some of the most beautiful and amazing geology to be found in the American West.

☐ The Lewis & Clark Geotour: Marias River to Gates of the Mountain, is offered July 12-17, beginning and ending in Great Falls, Mont.

The trip, led by William Hansen, with Jireh Consulting Services in Great Falls, allows participants a chance to trace the route of the legendary expedition, including time at the Gates of the Mountains, where Mississippian limestones are exposed in the hanging wall of the Eldorado Thrust along the Missouri River.

Great Falls also is the departure site for the AAPG field seminar "Fractures, Folds and Faults in Thrusted Terrains," offered Aug. 2-7.

☐ Another popular AAPG Geotour gets under way in August: Grand Canyon Geology via the Colorado River.

This trip, set Aug. 5-12, will again be led by veteran Grand Canyon tour guide John Warne, Colorado School of Mines, Golden, Colo., and William Wade, of the Woodlands, Texas.

This adventure offers participants the chance to float right through the heart of the spectacular region, with plenty of side-trips along the way.

☐ Finally, consulting geologist John Balsley will lead the field seminar "Foreland Basin Clastic Reservoirs: Book Cliffs, Utah," a nine-day course that begins Aug. 16 and features four-wheel drive expeditions, a river run and an up-close encounter with the magnificent Book Cliffs.

Information and registration for these and all AAPG education offerings can be found online, at [www.aapg.org](http://www.aapg.org), or call 1-818-338-3387 (USA only).

## 3 DAY INTERNATIONAL CONFERENCE

April 5<sup>th</sup> – 7<sup>th</sup> 2005 at The Geological Society Burlington House, Piccadilly, London, UK

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### Themes...

- Beyond the McKenzie model
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- Rift basin exploration case histories and future potential
- Reservoir architectures, quality and deliverability

Recent exploration trends have focused on the exploration of Deepwater Tertiary Passive margins, however interest is shifting to the pre-cursor rift basin architecture and petroleum systems associated with continental break-up. Frontier exploration opportunities exist in both under-explored plays and new plays in mature pre-cursor rift basins of the North and South Atlantic margins, the former Soviet Union, Middle East and the Far East. This integrated 3-day international conference will attract leading-edge contributions from industry and academia and seeks to embrace all aspects of rift basin dynamics – from heat flow and plate margin evolution through structural-stratigraphic styles to sediment dispersal mechanisms and petroleum system characterization. Regional scale observations combined with focused field case studies will determine the critical factors and key learnings that will shape future evaluation of the global rift play theme. Lessons from documented rift basins and observations from outcrop analogs have calibrated the current models, however new perspectives utilizing emerging technologies have necessitated a challenge to existing dogma. The implications for exploration are far reaching and the conveners endeavor to capture the advances highlighted by the technical meeting, by publishing the conference proceedings as a Geological Society Special Memoir.

**Geological Society Petroleum Group      1st announcement and call for papers**

**Abstract submission deadline: 31<sup>st</sup> October 2004**  
**Please forward abstracts to: [lydia.dumont@geolsoc.org.uk](mailto:lydia.dumont@geolsoc.org.uk)**

#### Convenors:

**Scot Fraser and Mike Lentini** – Shell International E&P Inc Houston, USA  
**Al Fraser** – BP Sunbury, United Kingdom  
**Rob Gawthorpe** – University of Manchester, United Kingdom

For registration and further details please contact Lydia Dumont on:  
Tel: +44 (0) 20 7434 9844 or Email: [lydia.dumont@geolsoc.org.uk](mailto:lydia.dumont@geolsoc.org.uk)



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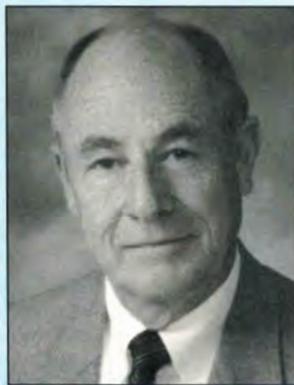
Two new AAPG Foundation funds have been established by and in honor of former AAPG president and Foundation trustee Eugene F. Reid.

□ The **E.F. Reid Scouting Fund** will support programs that teach geology to young people in the Boy Scouts, Girl Scouts and other youth organizations as determined by the Trustees of the Foundation.

The current Boy Scout Geology Merit Badge requirements and supporting instructive materials were developed and are updated from time to time with Foundation support and input from

AAPG members and Boy Scout staff. AAPG members also perform administrative and teaching functions at various local and national Boy Scout venues in connection with the Geology Merit Badge. This fund provides perpetual support for this and similar activities with the Boy Scouts and other youth organizations.

The fund was named in recognition of Bud



Reid

Reid's long-time dedication and financial support of the Boy Scouts and the Boy Scout Geology Merit Badge.

□ The **E.F. Reid Dibblee Fund** supports the work of the Thomas W. Dibblee Jr. Center for Geology, which was created through the merger of the Thomas W. Dibblee Jr. Geological Foundation and the Santa Barbara Museum of

Natural History.

The Foundation's assistance will help in publication of up to 200 geological maps of central and southern California research by Dibblee during his lifetime of fieldwork.

Reid has been an avid financial supporter of the Dibblee mapping projects through generous donations to the Foundation.

To make a donation to either of these funds, or for more information, contact Diane Keim in the Foundation office, at 918-560-2674; e-mail – dkeim@aapg.org or go to foundation.aapg.org.

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| Charles Robert Speh<br><i>In memory of William F. Tanner</i>  | Kenneth H. Crandall<br>Memorial Grant<br>Lawrence W. Funkhouser  |
| Joseph Edward Sullivan<br>David Lowell Tett<br>Ottavio Viglione<br>Paul Joseph Wagenhofer<br>Michelle Marie Williams<br>Robert L. Williams Jr.<br>Gordon K. Yahney<br>Harvey Ray Young<br>Gregory P. Yvarra | Norman H. Foster<br>Memorial Grant<br>Lee C. Gerhard<br>Paula Marie Koch<br><br>Harold J. Funkhouser<br>Memorial Grant<br>Lawrence W. Funkhouser |

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| <b>Grants-in-Aid Fund</b><br>Hans Gerhard Ave-Lallemant<br>Henry Lee Berryhill Jr.<br><i>In memory of Parke Snavely</i><br>Margaret Stearns Bishop<br><i>In memory of Chal Pitman</i><br>Richard Gordon Boyd<br>Philip Rodney Brown<br>Arthur Wallace Butler III<br>Angus S. Campbell<br><i>In memory of Philip Raveling</i><br>Isabelle Cojan<br>Kevin Patrick Corbett<br><i>In memory of Mel Friedman</i><br>Wayne C. Cox<br>Tara Davis<br>Barry Robert Gager<br>Radu Axente Gîrbacea<br>Robert John Groth<br><i>In memory of Andy Alpha</i><br>Joann S. Hall<br>Mahesh Prasad Mehra<br><i>In memory of Shri Ramprasad</i><br>Haydn Herbert Murray<br>Toshio Negishi<br>Ted Eric Playton<br>Michael Joseph Quinn<br><i>In memory of Clayton H. Johnson</i><br>Wayne Alvin Schild<br><i>In memory of Eugene Orwig,</i><br><i>William J. Stuart,</i><br><i>Thomas D. Jones,</i><br><i>H. Philip Raveling</i><br><i>and Raymond L. Frisby</i><br>Carl Kurt Stropoli<br>Page Charles Twiss<br><i>In memory of Ronald K. Deford</i><br>Robert Joe Wenger<br>James Lee Wilson<br><i>In memory of Paul N. McDaniel</i> | Robert K. Goldhammer<br>Memorial Grant<br>Mark Joseph Gallagher<br>William A. Morgan<br><br>John E. Kilkenny<br>Memorial Grant<br>Grosvenor Brown<br><br>Arthur A. Meyerhoff<br>Memorial Grant<br>John Melvin Henton Jr.<br><br><b>Eugene Reid Scouting Fund</b><br>Eugene F. Reid<br><br><b>Distinguished Lecture Fund</b><br>Kunio Arai<br>Vladimir Ciprys<br>Hugh Dresser<br><i>In memory of M.A. Dresser</i><br>William H Elson Jr.<br><i>In memory of Allan Bennison</i><br>Michael Edward Fittall<br>James A. Gibbs<br><i>In memory of Allan Bennison</i><br>Robert Nathan Ginsburg<br><i>In memory of Robert Dunham</i><br>Robbie Rice Gries<br>Jeffrey Tyler Jones<br>Keith Arthur Kvenvolden<br>Wayne Elden Moore<br>Dang Lan Nguyen<br>Duane Harold Sackett<br>Wayne Alvin Schild<br><i>In memory of Eugene Orwig,</i><br><i>William J. Stuart,</i><br><i>Thomas D. Jones,</i><br><i>H. Philip Raveling</i><br><i>and Raymond L. Frisby</i><br>Kush Tandon □ |
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For complete details, contact:

Michelle Mayfield Gentzen, American Association of Petroleum Geologists  
PO Box 979 • Tulsa, OK 74101-0979 • USA  
Fax: 918 560 2684 • E-mail: [mmayfiel@aapg.org](mailto:mmayfiel@aapg.org)



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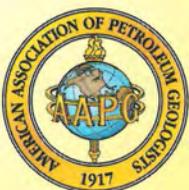
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**JOSÉ GALICIA BARRIOS, EXHIBITION CHAIR**  
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DEADLINE:  
SEPTEMBER 23**



**[www.aapg.org/meetings/can04/](http://www.aapg.org/meetings/can04/)**

## 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.)

**For Active Membership**

**California**  
Pierson, Raymond Marvin, Aera Energy Service Co., Bakersfield (reinstatement)

**District of Columbia**  
Gardner, Joan, Naval Research Lab., Washington (B.S. Parsons, J.D. Grigsby, H.G. Greene)

**Louisiana**  
Danielson, Daryl Arthur Jr., Murphy Exploration & Production, River Ridge (C.H. Murrish, G.D. Severson, H.J. Battalora Jr.)

**Oklahoma**  
Franks, James L., Kirkpatrick Oil, Oklahoma City (reinstatement)

**Texas**  
Bell, David A., Landmark Graphics,

Houston (reinstatement); Clowers, Stanley Robert, Clowers International, Galveston (reinstatement); Homann, Hermann, Fronterra Integrated Geosciences, Houston (M.A. Goss, D.C. Friend, P.O. Williams); Lankston, Robert W., ConocoPhillips, Houston (reinstatement); Mercer, David Morris, Unocal, Sugar Land (J.D. Barrett, D.E. Self, C.J. Lothringer); Welch, John Charles, Westport Tech Center, Spring (reinstatement)

**Brazil**  
Meister, Egon Manfred, Quinal Inc., Rio de Janeiro (reinstatement)

**Canada**  
Marcil, Jean-Sebastien, Junex Inc., St. Nicolas (C. Morin, B. Granger, J. Boyd)

continued on next page

### Certification

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

**Petroleum Geologist**  
**Pennsylvania**  
Morris, Leland Joseph, Equitable Production Co., Pittsburgh (M. Canich, P. Gerome, M. Stamper)

## Rocky Mountain Natural Gas 2004

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- *Resource Pyramid*
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  - *Unconventional Gas*
  - *Coalbed Methane*
  - *Shallow Gas*
  - *Applied Reservoir Models*
  - *New Seismic Techniques*
- Basin and Petroleum Systems**

**JOINT MEGA-SESSION**

- Keynote: Bobby S. Shackouls**  
CEO—Burlington Resources, Inc.  
Chairman—National Petroleum Council
- *Natural Gas and World Energy*
  - *Role of the Rockies*
  - *Search for Giant Oil Fields*
  - *Smart Development*
  - *Investment Forum*

**Pre-Registration Deadline: July 9th**  
**[www.rmag.org](http://www.rmag.org)**

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hosted by the  
*Rocky Mountain  
Association  
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Rocky Mountain Section

and

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*Colorado Oil & Gas  
Association*  
[www.coga.org](http://www.coga.org)



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For more information:  
[www.coga.org](http://www.coga.org)  
and  
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Ph 303-861-2387  
Fx 303-861-0373

*IPTC Set for Doha, Qatar*

# Joint Technology Meeting Launched

*(Editor's note: This proposal comes from the presidents of four groups. They are AAPG's Patrick J.F. Gratton, 2004-05; EAGE's Olivier Dubrule, 2004-05; SEG's Peter Duncan, 2003-04; and SPE's Kate Baker, 2004.)*

During 2003, our societies – the American Association of Petroleum Geologists, the European Association of Geoscientists & Engineers, the Society of Exploration Geophysicists and the Society of Petroleum Engineers – held extensive discussions about working together to organize a new oil and gas conference and exhibition.

On behalf of our organizations, we are now pleased to announce the result of these discussions: the International Petroleum Technology Conference (IPTC). This biennial event will not only serve our traditional E&P sectors but also will cover midstream activities and have a significant focus on gas.

The first IPTC will be held Nov. 21-23, 2005, in Doha, Qatar, in the region of one of the world's most extensive gas reserves.

Our societies will combine our individual technical expertise in this cooperative effort to present what we believe will be the most significant and comprehensive conference on gas and oil in the Eastern Hemisphere.

We expect attendees to represent a

variety of disciplines, including petroleum engineers, geologists, geophysicists and others. We plan to draw engineering professionals and industry decision-makers from across the globe – the Middle East, Europe, Africa, the former Soviet Union, Asia Pacific and the Americas.

The unique value IPTC brings to the industry is derived from a strong technical program and technology exhibition. This conference also will provide a focused setting for key players to engage with in-region gas and oil providers, regional energy ministers and



international executives to initiate relationships and new business opportunities.

The contacts and relationships established at this conference could

help key industry players open new markets and channels extending far into the future.

Over the years, our members and the industry in general have benefited from our various cooperative efforts. This is the first time, however, that AAPG, EAGE, SEG and SPE have joined in a single initiative, and one of such breadth and scope. We are excited and pleased to work together on this unique international event for our industry.

Join us at the International Petroleum Technology Conference in Doha, Qatar, in 2005. □

continued from previous page

**Egypt**

El-Daly, Magdy Abdelhady, Badr ElDin Petroleum, Cairo (M.A. Abdalla, H.G. Hussein, S.H. Elkawa)

**Nigeria**

Ladipo, Kehinde Oluwatoyin, Shell Nigeria, Port Harcourt (A. Adesida, N. Omorodion, S.O. Olugbodi); Nwachukwu, Jasper Amaechi, Shell Nigeria, Lagos (A. Adesida, E.U. Adokpaye, N. Omorodion); Onyekweli, Augustine Jude, Shell P.D.C., Port Harcourt (O.A. Fatoke, B.I. Jev, C.O. Ukoko); Pauli, Harald, Shell, Lagos (T. Payenberg, S.C. Lang, J.J.G. Reijmer)

**Saudi Arabia**

Bakr, Mohamed Youssef, King Abdulazai University, Jeddah (reinstate); Jones, Peter J., Saudi Aramco, Dhahran (reinstate)

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## A Mover in Creating the Profession

## Pioneer Was a 'Practical' Geologist

(Editor's note: This Commentary is part of ongoing reports by the EXPLORER to highlight geologists who have made important contributions to the science and the profession.)

By DONALD L. ZIEGLAR

Edwin Theodore Dumble, at a private dinner held during the March 1924 AAPG meeting in Houston, was given a solid silver Tiffany plaque inscribed with the names of 77 of his professional colleagues and friends.

The inscribed sentiments ("our recognition of your many and great contributions to the advancement of science," "your unflinching kindness and consideration," "your wisdom which you have always so freely shared") indicate Dumble must have been an unusual geologist.

But neither the sentiments nor the number of names on the plaque really set out his importance to the professions of petroleum geology, micropaleontology and petroleum engineering.

Those colleagues and friends knew that in the early 1900s the geologists working in the geological organization of the Southern Pacific Company under Dumble's leadership had demonstrated that petroleum geology was applicable to the oil industry and could be a productive career. That was important.

They knew that Dumble, who had been Texas state geologist for the Third Geological Survey Texas between 1888 and 1897, had brought an in-depth

*The methods and procedures they pioneered were later adopted by many of the other oil companies operating under similar conditions.*



Dumble

understanding of the geology of Texas and surrounding areas to the Southern Pacific Company in 1897 when they hired him as a consulting geologist.

They also knew he had written about his ongoing desire or philosophy of using geology for the development of natural resources to benefit the people and prove "the practical value of scientific geology."

They knew that the Southern Pacific, after the oil discoveries at Kern River, California, in 1899 and at Spindletop in 1901 started converting its locomotives to oil, and Dumble was responsible for that fuel resource.

He was the right man with the right geological background in the right place at the right time to help develop the profession of petroleum geology. That was important.

\* \* \*

To assure a supply of oil for Southern Pacific, Dumble first hired three experienced colleagues from the Texas Survey as consulting geologists – Josiah

Owen, William Kennedy and W.F. Cummins – and added some other experienced geologists to work in Calif. and the Gulf Coast.

In 1903 Southern Pacific purchased an interest in the Saratoga oil field in Texas, incorporated the Rio Bravo Oil Co. for operations in the Gulf Coast, the Kern Trading and Oil Co. for operations in California and, in 1911 following successful exploration in Mexico, incorporated the East Coast Oil Co. for those operations. That was important.

College trained geologists began to be added to the staffs of these companies, with the earliest from the University of Texas in 1903, from Stanford University in 1907 and from the University of California at Berkeley in 1912. That was important.

Those working in companies under Dumble's leadership had to be a jack-of-all-trades, "geologist, engineer and landman," while applying geologic observations and scientific principles to oil field development as well as to the interpretations needed for exploratory projects. In essence, they "wrote the

book" on applications of scientific geology in the oil industry.

The methods and procedures they pioneered were later adopted by many of the other oil companies operating under similar conditions. That was important.

They also knew that Rio Bravo in 1920 formed the first industrial micropaleontology laboratory in Houston and pioneered the applications of that discipline to subsurface geologic interpretations. Dumble had been aware of the work of I.A. Udden in micropaleontology at the University of Texas, and had seen the potential of using microfossils for correlating the various producing horizons in the coastal fields. That concept came to fruition when Esther Richards (Mrs. Paul Applin), who had studied at both U.C. Berkeley and University of Texas, was hired to lead Rio Bravo's laboratory.

By 1924 those efforts – many done jointly with Humble and Texaco

continued on next page

## SEG/EAGE 2004 Distinguished Instructor Short Course

Presented by Paul Weimer



### "Petroleum systems of deepwater settings"

This course provides geoscientists with a broad overview of the petroleum systems of deepwater settings. The material presented is approximately the 80-85th percentile of available information. Lectures will be complemented by extensive references to key publications that geoscientists may use to follow up. Course notes consist of a comprehensive book of petroleum systems of deepwater deposits.



Paul Weimer will present this course at the following cities in 2004:

June 7 .....Paris	September 6 .....Caracas	November 5 .....Madrid
June 15 .....Tel Aviv	September 8 .....Rio de Janeiro	November 8 .....Utrecht
August 2 .....Chennai, India	September 10 .....Buenos Aires	November 10 .....Stavanger
August 5-6 .....Beijing	September 29 .....Calgary	November 12 .....Aberdeen
August 11 .....Tokyo	October 8 .....Denver	
August 14 .....Kuala Lumpur	October 21 .....New Orleans	Fall .....Houston
August 17 .....Perth	October 28 .....Cairo	Fall .....Halifax
August 19 .....Sydney	November 1 .....London	
August 26 .....Midland	November 3 .....Milan	

The schedule has been posted on the SEG Continuing Education web site, <http://ce.seg.org>.



## Nevada Petroleum Society 2004 Field Trip

### Alamo Impact Breccia and Megabreccias of East Central Nevada

Note: Some stops will entail strenuous hiking over rugged terrain.

**Dates:** Friday, September 17, 8:00 a.m. – Sunday, September 19, 3:00 p.m. (Trip begins at intersection of I-15 and U.S. 93, 22 miles northeast of Las Vegas, NV. Dinner meeting and lodging on Friday night in Alamo, NV. Saturday night lodging in Ely, NV. Trip ends in Railroad Valley.)

**Leaders:** John E. Warme, Colorado School of Mines  
Charles W. (Charlie) Gillespie, CG Squared  
Jerome B. (Jerry) Hansen, Great Basin Expl. Consultants  
Don E. French, Independent Geologist

**Fee:** \$140 members/\$165 non-members (Fee includes Friday dinner, 3 lunches, refreshments, and guidebook. **Attendees must make plans for their own lodging and transportation.**)

**Deadline:** Registration and payment must be received by Sept. 3<sup>rd</sup>.

**Itinerary:**

Day 1: Arrow Canyon Range – Delamar Range – Crystal Springs – Hancock Summit area  
Day 2: south Hiko Hills – west Tempiute Mountain  
Day 3: west of Gold Point Mine – Ragged Ridge – Eagle Springs Field – Grant Canyon (in the Grant Range)

**Additional details:** Call Diane Phillips (775-267-4663, Minden) or Charlie Gillespie (775-826-3990, Reno).

Or visit the NPS website at <http://www.nbmj.unr.edu/nps/>.



Photo courtesy of Bill Ayrton

It's never too soon to start planning for an AAPG annual meeting – especially when it's going to be held so close to so much amazing geology. The 2005 annual meeting will be held June 19-22 in Calgary, Canada, near many magnificent geologic treasures in the eastern Rocky Mountains, including the Sawback Range (above), where rocks were formed 250 to 350 million years ago and then tilted to this 70 million years ago. The call for papers will be included in the August EXPLORER; information also is available online at [www.aapg.org](http://www.aapg.org).

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– enabled Gulf Coast operators to know the age of the reservoir beds and the correlation of the producing units between all the fields in the coastal plain. The publication of the studies by Esther Richards Applin, Alva E. Ellisor and Hedwig T. Kniker in the AAPG BULLETIN in 1925 provided the first useful and practical subdivisions for correlating Gulf Coast stratigraphy. That was important.

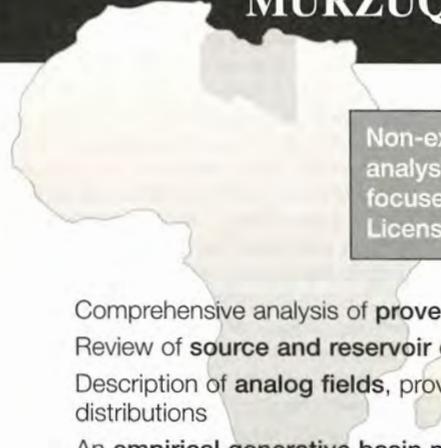
They knew that in 1921 Rio Bravo's John A. Suman authored a book *Petroleum Production Methods* whose primary aim was to help those in the

drilling and producing end of the business to work more efficiently. Although the book was not designed as a college text it was used in such education and went through three printings in subsequent years. That was important.

Edwin Theodore Dumble surely fulfilled his ongoing desire to prove "the practical value of scientific geology." His pioneering accomplishments in applying geology to oil field development clearly justified the award he received in 1924 and add meaning to the sentiments inscribed on the Tiffany plaque.

That is important. □

## Exploration potential of the **MURZUQ BASIN, SW LIBYA**



Non-exclusive geological and economic analysis of the Murzuq Basin SW Libya, focused on the M-Blocks of the current Licensing Round

Comprehensive analysis of **proven and possible petroleum systems**

Review of **source and reservoir distribution** and quality

Description of **analog fields**, proven trapping styles and field size distributions

An **empirical generative basin model** identifying regional kitchens/expulsion pulses through time

A general regional synthesis for objective **play and prospect risk** assessment

Technical assessment of open acreage, highgrading an **area with +2Bbbls oil potential**

A review of legal and fiscal constraints

A reconnaissance **economic analysis of a model exploration prospect** with alternative development scenarios

The south central **Murzuq** region western Libya is **one of the last under-explored onshore areas** of North Africa, on **direct trend** with the **prolific northern Murzuq petroleum province** and over 2.0 billion barrels oil reserves. **Analogous prospects**

identified in this southern region would be commercially attractive not only on a **full cycle basis** but also of interest to companies anticipating an **early sale and those seeking high quality frontier acreage to balance low risk re-development projects.**

For information:

**Daniel Clark-Lowes, Nubian Consulting,**  
tel: +44 (0)1984 624520 email: [d.clarklowes@btopenworld.com](mailto:d.clarklowes@btopenworld.com)  
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## STUDENT RESEARCH GRANTS IN MATHEMATICAL GEOLOGY

The International Association for Mathematical Geology (IAMG) is pleased to announce the availability of the 2004 Student Grants program. The Student Grants Program supports graduate student research in broad areas of mathematical geology for the purposes of advancing the development and application of quantitative methods in the geosciences. Recipients of the awards, which typically amount to \$2,000 US, must be enrolled in a formal university program in which they are pursuing a graduate degree.

Project proposals and requests for support should include the applicant's name and contact information, as well as the following: school in which the applicant is enrolled, degree being pursued, and expected completion date of degree; transcripts of undergraduate and graduate course work; list of prior awards and honors; description of professional and work experience, as well as extra-curricular activities; title of the project proposal, an abstract of no more than 500 words, and the target completion date; an endorsement of the project signed by at least one faculty member from the academic department in which the applicant is enrolled; and a detailed project budget.

All proposals will be evaluated on the basis of the applicant's academic record, endorsement from the sponsoring university and faculty, relevance and feasibility of the project, and financial need. Additional guidelines concerning the competition can be found on the Internet at [www.iamg.org](http://www.iamg.org). Incomplete proposals will not be accepted.

Written proposals for 2004 funding should be sent to Donna Dennison, Student Grants Committee, IAMG Office, 4 Cataragui St., Suite 310, Kingston, ON K7K 1Z7, Canada. Submission deadline is August 15, 2004.

## READERS' FORUM

**Gary Penley**

I am amazed and gratified that the story of Gary Penley came to your attention (June EXPLORER).

Gary, for his introduction into the petroleum industry, worked with me in Midland, Texas, after his Navy tour. Subsequently, I encouraged him to take the crash course in ground water at Oklahoma State in Stillwater. It was sort of a geological post-graduate examination in perseverance and determination. He made the grade in good shape and was immediately rehired by his former company.

Gary is to be commended for his service to humanity through demonstrating the freedom to achieve success in the United States of America. He has and is showing that, given the opportunity, a person seemingly condemned to mediocrity by early circumstance can rise above the stigma that elsewhere may have dictated his life.

Being a Navy man myself, I salute Gary for his everlasting humor that certainly must have relieved the stress and boredom of months below the world of sunlight in defense of the United States. His humor is infectious to those who have the pleasure of being his friend.

The pleasure of life is investigation. It is not the destination but the road that rewards the traveler. Gary found that course, and we are the beneficiaries of his enjoyment.

Gerald V. Mendenhall  
Midland, Texas

I first met Gary Penley when I was hired to "well sit" some wells in Kansas

*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.*

that were his geological projects. He was a "joke telling," enthusiastic person and was liked by all that were around the drilling rig.

Later, my admiration grew when a wildcat project of his discovered oil in northwest Kansas.

When we had free time, I learned that Gary had a "high plains upbringing" such as my own. We both had seen dust storms, worked cattle over in the spring, repaired windmills, barbed wire fences and both had spotted Indian ponies that we rode too fast and too hard when we were young.

For the next 20 years we stayed in contact, even when the oil business had its ups and downs. I remained in Kansas but Gary took on more wide oil geological provinces.

Through our conversations I had learned that Gary had a wide diversity of interests and a strong determination to succeed in what he was undertaking at the time, but becoming an author of books? This was a total surprise! I knew he could shoot a pistol and hit something "dead center" at 125 feet, but writing a book!

In *Rivers of Wind* he proved he could do it. It took the following two books, *Della Raye* and *Jubal*, to let me know that Gary had a very sensitive side and could express it with compassion through writing. He, in these books, tackled some difficult

problems in our society and gave both sides of the story.

Congratulations to Gary!

Carroll Charles Van Buskirk  
Black Forest, Colo.

**Questions**

Regarding your story on studying outcrops with laser technology (June EXPLORER):

The methodology here is very similar to Airborne LIDAR systems; I was just wondering whether anything like the use of multispectral sensors (visible, infrared, thermal IR) has been done on outcrops. It would create more rock type differentiation/decorrelation if multispectral or hyperspectral images can be overlaid on DEMs of outcrops, particularly enhanced ones.

The technique would be similar to airborne and spaceborne systems, but this time applied horizontally, with control points scattered across the outcrop. Image classification could be applied afterwards, providing quantitative information on the imagery.

And to push the visualization a little further, how about a multipolarization microwave emitter and sensor, patterned after POLSAR? (But something short of GPR systems – penetrating only at limited depth, or near outcrop surface levels.) This would be more sensitive to dielectric

patterns, hence could be used for hydrologic systems.

Gerald Galgana  
Bloomington, Ind.

**Painful Exercise**

The debate on reserve estimates (May EXPLORER) does not touch on the underlying technological aspect of such estimates.

The crucial property determining the rate of production, and also the ultimate recovery of a well, is the permeability. This quantity can only be determined by direct measurement. Its relationship to porosity is tenuous at best and non-existent at worst. It is both the most important and yet the most elusive reservoir property.

Reservoir heterogeneity refers largely to this property and is now an accepted buzzword in the industry. Well information constitutes a digital sampling of the reservoir and is thus subject to the limitations of this process. Even at 40-acre spacing the sampling process is inadequate, as clearly proven by the infill drilling done in Texas (Fisher, pers.com.) Thus the lateral continuity, or fragmentation, can only be ascertained by bulk reservoir surveying, such as pressure pulse monitoring, pressure draw down or tracer chasing.

The non-uniformity of reservoirs has been badly underestimated in the past, and average values, as used in earlier days, lead to erroneous results.

These facts demonstrate that the model building and history matching of reservoir engineers and geologists is

continued on next page

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continued from previous page

largely based on assumptions and supported by few – woefully inadequate – facts. This is the basic reason for the frequent estimate revisions, as well as the arguments that prevail about the “proper” approach to such estimates.

One may ask why the downward revisions receive so much attention. Obviously they represent bad news. Since news is bad by definition, this is it.

Secondly, successful oil finders have to be optimists, as there are always more reasons for the oil not to be where it is.

Carrying this optimism into the assumptions of the oil/gas modeling process invariably leads to the painful exercise of downgrading.

Peter Gretener  
Calgary, Canada

**Reservoir Estimates**

It is true that nobody knows how much oil is still available worldwide. However, everybody should be aware the figures are unreliable.

Among the reasons anybody can mention, ethics and lack of proper training are my favorites, closely followed by lack of reliable data to support reserves estimates.

Companies should make a real effort to establish key reservoir parameters – otherwise the situation will continue. Shell’s disclosure was a brave gesture that should be followed by others.

Pascual Marquez-Suarez  
Anzoategui, Venezuela

**Hutton, Lyell**

The May President’s Column addresses professionalism, and includes references to two publications well-known in the history of geology:

“Geology as a profession got its start in the late 18th century. Some examples of the early history are works done by James Hutton in 1785 with his paper, ‘The Theory of the Earth,’ and by Charles Lyell with his 1829 book, *Principles of Geology*.”

These dates of Hutton’s and Lyell’s works are not quite right ...

On March 7 and April 4, 1785, James Hutton’s paper was presented to the Royal Society of Edinburgh, but Joseph Black, the chemist, read Hutton’s text on the March date because Hutton was ill at the time. The title of the paper was not “The Theory of the Earth,” but “Examination of the System of the Habitable Earth with Regard to its Duration and Stability.”

A 30-page “Abstract” was printed, probably shortly after the April meeting. Its title page refers to the two oral presentations and to Hutton’s title “System of the Earth...”, but it does not name Hutton as author, nor does it say who published it, where it was

published, or when. Of interest to petroleum geologists, the Abstract does give Hutton’s precise definition of sediment “porousness,” i.e., sediment porosity, which is implied, but never stated, in Hutton’s later writing.

Sometime after January 1786, the manuscript of Hutton’s complete talk was typeset in final form, and Hutton distributed at least some offprints. This offprint, with the new title “The Theory of the Earth,” was eventually published in the 1788 Transactions of the Royal Society of Edinburgh (pages 209-304).

In 1794 and 1795, Hutton prepared the two-volume *Theory of the Earth*, on which his reputation rests. These two volumes have a 1795 date, but the two volumes probably were not available for sale until January 1796. Hutton’s 1788 paper, which has the same main title as his 1795 book, reappears, nearly word-for-word, as the first 200 pages of

Volume I of his 1795 *Theory* (there are 1,187 pages, total, in volumes I and II).

Hutton died in 1797, leaving a manuscript that Archibald Geikie edited and published in 1899 as Volume III of Hutton’s *Theory*.

Charles Lyell’s *Principles of Geology* also has a fuzzy date of publication. The first edition of his *Principles* appeared in three volumes, all three later than 1829. According to dates given in Wilson’s (1972) biography of Lyell, the three volumes appeared, respectively, in July 1830, December 1831 and April 1833. During his lifetime, Lyell’s *Principles* went through 11 editions. Lyell died in February 1875. A twelfth edition in two volumes has a Preface dated October 1875 over the name of Leonard Lyell, Charles Lyell’s nephew.

The appearances of Hutton’s *Theory of the Earth* (1795) and Lyell’s *Principles of Geology* (first edition by 1833) are

markers with intercontinental importance in the history of geology. The dates assigned to their publication are, by themselves, interesting stories.

Cyril Galvin  
Springfield, Va.

**Colorful**

I think it is great news that we may be shifting to all-electronic publication of the AAPG BULLETIN.

I have been thinking that the articles I need to publish on oil and gas exploration models need color. I can’t afford it in the BULLETIN, and so I came to the conclusion that the only way I could publish with AAPG in the future would be to use *Search and Discovery*, AAPG’s online journal.

Now, I have hope that I can continue to submit articles to the BULLETIN.

Lee Gerhard  
Lawrence, Kan.

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The U.S. Department of Energy has funded six new projects to develop microhole technologies that can drill wells less than three inches in diameter (December 2003 EXPLORER).

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Companies involved in the projects include Baker Hughes and Schlumberger.



## Position Available U.S. Geological Survey (USGS) Research Structural Geologist

USGS, Central Region Energy Team, is soliciting interest from qualified individuals for the position of Research Structural Geologist in Lakewood, Colorado. The position will involve state-of-the-art research in structural geology as part of a multidisciplinary team that investigates geologic controls on petroleum occurrence and assesses petroleum resources. The research assignments will address fundamental questions related to the structural geology of hydrocarbon accumulations, at regional to prospect scales, in support of USGS assessments of oil and gas resources in the United States. Research efforts will involve seismic interpretation, structural modeling, and field-based structural analysis.

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Applications (resume and application questions) for this vacancy must be received on-line via the USGS Online Automated Recruitment System (OARS) BEFORE midnight Eastern Time (Washington, D.C. time) on the closing date of this announcement. If you fail to submit a complete online resume, you will not be considered for this position. Requests for extensions will not be granted. Most libraries, employment offices, and all USGS personnel offices can provide access to the Internet. If applying online poses a hardship for you, you must speak to someone in the Servicing Personnel Office listed on this announcement PRIOR TO THE CLOSING DATE for assistance. Contact Tina Garcia at 303-236-9569 or [tpgarcia@usgs.gov](mailto:tpgarcia@usgs.gov).

The OARS system can be accessed at <http://www.usgs.gov/ohr/oars/>. The announcement number is: CR-2004-0236. The salary range is \$61,712-\$95,402 depending upon qualifications. The closing date is August 31, 2004.

U.S. citizenship is required. USGS is an Equal Opportunity/Affirmative Action Employer.

## DPA

from page 43

Reserve Estimations, the DPA is in the exploratory stages of determining if we should progress toward a certification class called "Certified Reserve Evaluator." We are in discussions with the Society of Petroleum Evaluation Engineers (SPEE) to ascertain if this is something the two organizations should be taking a lead, in order to head off mandates imposed by the SEC or new laws that will most certainly come forward.

We have set up an ad hoc committee to explore this issue, with the DPA working closely with the SPEE and Ronald Harrell of Ryder Scott Co. Harrell published an article in the March 15, 2004, *Oil & Gas Journal* titled "The Time Has Come to Certify Reserves Evaluators" (page 24). If you have not read this article, I recommend that you get a copy.

Over the last several years, the DPA executive boards have been in the process of elevating the status of the

DPA to a worldwide certification body.

Did you know that we have reciprocity with the Geological Society of London?

The DPA is also working diligently to be observant of issues that impact domestic exploration. A recently proposed Licensing of Geologist bill in the state of New York, if passed, would allow persons (i.e. surveyors and engineers) with no geological education to practice geology.

The DPA has written a letter to the appropriate officials concerning this matter. The DPA's concern is that if these people are permitted to practice geology without formal training, they will take jobs from skilled geologists.

\* \* \*

As you can see, the DPA is working hard on issues that can affect you. If you are not a DPA member, go to [dpa.aapg.org](http://dpa.aapg.org), pull up an application and join. If you are a member, encourage a friend to join. The dues are less than the cost of one coke or a glass of tea per week. The DPA needs you; the more members we have, the more people in positions of power will take notice.

Feel free to e-mail me with questions or concerns at [mparty@wbltd.com](mailto:mparty@wbltd.com), or call me at (432) 686-5971. □

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#### Senior Geologist

The U.S. Department of Energy's National Energy Technology Laboratory works to develop advanced technologies that expand the recoverability of the nation's oil and gas resources. We are now seeking a petroleum geologist skilled in regional resource appraisal to join our in-house research staff at our Morgantown, West Virginia facility.

Responsibilities will focus on the planning and execution of state-of-the-art geological analyses of emerging or underutilized natural gas and petroleum resources. These analyses will be designed to provide NETL with an improved understanding of the nature of resources that currently exist beyond the limits of economic recoverability. The position will also include contribution to the development and use of advanced computer models designed to evaluate the potential of advanced technologies to expand the recoverability of the assessed resources. Applicants should be experienced with regional and field-scale correlation and mapping, deposystem interpretation, reservoir characterization through analyses of well-log and production data, and the use of state-of-the-art geologic interpretation/visualization software. Experience conducting analyses pertaining to unconventional and deep gas accumulations is desirable.

Interested applicants should visit our website at [www.netl.doe.gov](http://www.netl.doe.gov) in order to obtain required application procedures.

C&C Reservoirs has vacancy for two Senior Petroleum Geoscientist to join our research team in the Houston office. Candidates should have: (1) a Ph.D. in Geology; (2) at least five-year experiences in exploration and/or development; (3) a strong commitment to research excellence; and (4) sound knowledge of a broad range of geological and reservoir-engineering principles and practices. Excellent written communication skill is essential. The primary job responsibility is to write field evaluation reports and advance the art and science of applying analogs in the areas of exploration and development.

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## Registration and Final Call for Papers A Field Symposium STRATIGRAPHIC AND STRUCTURAL EVOLUTION OF THE OUACHITA MOUNTAINS AND ARKOMA BASIN: APPLICATIONS TO PETROLEUM EXPLORATION



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**Maximum:** 70 participants.

**Lodging:** Not included. See registration page for Poteau lodging.

**Presentations:** We welcome oral and poster presentations in stratigraphy, sedimentology, structure, paleontology, and subsurface geology of the Arkoma Basin and Ouachita Mountains as applied to the search for and development of petroleum resources. For consideration, submit 250-word abstract (electronic preferred) to Roger Slatt ([rslatt@ou.edu](mailto:rslatt@ou.edu)) by August 1, 2004.

**Symposium Volume:** Full papers of presentations, plus additional papers, will be published by OGS. Papers must be received by January 15, 2005. For information, contact Ibrahim Cemen ([icemen@okstate.edu](mailto:icemen@okstate.edu)).



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**DIRECTOR'S CORNER**

# Strategic Plan a 'Members Plan'

By RICK FRITZ

There is an old Greek proverb that says, "Act quickly, but think slowly." That is exactly the advice the leadership for AAPG has followed during the last five years.

In 1999 a five-year business plan was developed *very quickly* for AAPG in response to budgetary problems and member needs. This was not a detailed plan, but rather outlined areas of AAPG business that needed attention, especially the budget and membership.

It let us *act*, but also gave us time to *think slowly*.

As a result:

✓ In the 1999-00 fiscal year AAPG decreased expenses through a reduction-in-force and other cost-saving measures.

✓ During the 2000-01 fiscal year, we placed emphasis on revenue enhancement and development, e.g., APPEX was established that year.

✓ The 2001-02 fiscal year emphasized intersociety projects and staff development. That year we hired three new directors for AAPG.

✓ The Membership Enhancement and Development Program was established during fiscal year 2002-03.

This year was focused on developing a comprehensive strategic plan to replace the old business plan. The Advisory Council, which is responsible for strategic planning, met two times this year to develop the plan. The chair of

*The new strategic plan is the most comprehensive long-range business plan ever developed by AAPG.*

the Advisory Council, Dan Smith, held many reviews of the strategic plan with both members and staff.

Two key components of the strategic plan were the all-member survey and program assessments.

\* \* \*

The all-member survey gave the Advisory Council a starting point. Several smaller surveys were made during this year on key focus areas. Assessments were made of each program within AAPG. Staff and members participated and "graded" each program against current business climate and members' wants and needs.

Each program assessment resulted in a recommendation to continue, build up, jointly develop with other societies, or divest.

The strategic plan has five major elements:

☐ Timeless elements such as core ideology, core purpose and core values.

☐ Mega-issues, which are key focus areas for the future.

☐ Ten- to 30-year planning horizon, which includes the envisioned future of AAPG.

☐ Five-year planning horizon that is continually reviewed and includes basic assumptions about business climate.

☐ Three- to five-year planning horizon that includes goals, strategic objectives and the actual strategic details.

The end result of all of these strategic "buzz words" is that we now have a comprehensive strategic plan that will *take the place* of the old business plan.

Having *thought slowly*, we can now *act quickly*.

\* \* \*

The key action portion of the plan is under element five – the three- to five-year planning horizon. These actions are defined in six goal areas:

1. Advance the science.

2. Continuous professional development.

3. Public awareness and understanding.

4. Membership and membership services.

5. Financial stability.

6. Worldwide presence.

The final version of the strategic plan was presented to the AAPG Executive Committee on June 30. On July 1 we entered into the "implementation phase" of the strategic plan. After approval, the strategic plan will be placed on AAPG's home Web page ([www.aapg.org](http://www.aapg.org)) for final comment and review by the membership.

The new strategic plan is the most comprehensive long-range business plan ever developed by AAPG. It was developed with such broad member input, it is truly a "members plan."

We have been looking forward to this "fifth year" to finalize the planning that was started in 1999. In the words of the Ghostbusters: "*We have the tools, and we have the talent!*"

We are ready to go!



## Ethics, Policy, Certification

# DPA Dealing With Practical Issues

By J. MICHAEL PARTY  
DPA President

It is a pleasure to serve as president of the DPA for the coming year. I want to thank the DPA Executive Board members for their hard work over the last year, and many thanks go to Bob Shoup, who did a great job as the division's president. My hope, and my charge, is that I will build on what he has done and continue to make the DPA stronger.

The DPA has been blessed with dedicated leadership over the past several years, as well as an excellent core of councilors. Our Executive Board for the coming year plans to continue in this tradition.

One person I would like to recognize at this time is Norma Newby, manager of the office of divisions at AAPG headquarters in Tulsa. She is extremely dedicated and works hard at her job, which keeps the DPA on course, giving continuity from one board to the next.

\* \* \*

We are hearing a great deal of discussion about ethics in business – especially the oil business. With issues such as Enron's accounting problems and Shell having to lower its reserve estimates, lawmakers are clamoring for answers.

(We have seen passage of the Sarbanes-Oxley Act of 2002, which makes the upper management accountable as well as the lower echelon employees. A violation of this act could result in large fines plus jail time.)

When discussing corporate ethics, one must keep in mind that ethics, and the way companies approach ethics, start at the highest level in a corporation.

If a company is run by people who shade the line between ethical and unethical behavior, or who ignore the line altogether, this attitude will be passed down the command structure and will become part of the company's culture.

I have had the pleasure of working 23 years for a company that regards ethics as its utmost priority, and it starts at the very top. Therefore, I say to all officers and managers within a company, if you cultivate the impression that the line on ethics can be blurred, it may come back to haunt you.

Remember, a large part of corporate ethics is learned by example. If your employees do not have a good rudder on ethics, you may be the one they end up taking advantage of. We have all heard of instances in which companies have received inferior products or services, only to learn later that some favors have been traded. This could, and most likely will, have an effect on your company's bottom line.

As an employee, no matter our position within the company, we have a responsibility to conduct our business in an ethical manner. Everyone needs to pay heed to the examples that they set and cultivate.

The DPA has speakers giving talks at several events regarding ethics and is in the process of setting up schools to educate members of the AAPG about ethics and how it can affect you and your company.



\* \* \*

As we move closer to the national elections, I would venture to say that we can expect to see congressional hearings dealing with higher gasoline prices and the problems with reserve estimates.

This is where the DPA is striving to be a leader in protecting your interest.

One function of the DPA is to write position papers on issues that affect the oil industry and our ability to pursue our careers and support our families. If you log on to [dpa.aapg.org](http://dpa.aapg.org) and go to the Governmental Affairs Committee, you will be able to read 15 position papers that already have been written and distributed.

The DPA *is not* supporting one candidate over another – our goal is to get facts in front of lawmakers so they

can make informed decisions.

Our representatives and senators need input from our industry to help shape laws – or, in some cases, encourage them not to pursue some avenues of governmental intervention. They will receive information from groups that are opposed to the oil and gas industry, and in some instances this information is severely outdated or misrepresented.

Unlike many groups that oppose our industry, the DPA will present facts based on the best science and the best data currently available in our position papers.

Some past laws, such as the Windfall Profits Tax, have taken money out of your pockets; when the oil bust of the mid-1980s hit, however, did you hear of many lawmakers wanting to help this industry by giving us some of that money back?

Consider this: Milk is higher per gallon than gasoline, and dairy farmers are subsidized by your tax dollars so we can have an uninterrupted flow of milk to the stores.

We must speak up regarding issues that directly affect us, or we will wake up one day to find that we have been burdened with some onerous legislation that will severely impede our ability to work in this industry and support our families.

\* \* \*

With mumblings from the SEC and Capitol Hill relating to the problem of

See **DPA**, page 42



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