Why There is so Much Gas in The Rockies & Where Future Supplies Will be Found

Fred F. Meissner, TPA, Consultant

Note: This article is from the Denver Chapter and is the fourth in a new series submitted by SIPES Chapters. It is a condensation of a presentation made by Mr. Meissner to the SIPES Denver Chapter luncheon meeting in November 2002. One of the raging discussions in the Rocky Mountains at recent AAPG and RMAG meetings is the viability of the basin center concept. Mr. Meissner has studied the subject of deep basin accumulations for over 15 years, and his work suggests that they will continue to be an important target for gas exploration in the Rockies. All material is copyrighted to Fred F. Meissner, and is published with permission.

INTRODUCTION

The purpose of this talk is to consider two subjects concerning the occurrence of natural gas in the Rocky Mountain area. The first is the WHY there is so much gas, and the second is the WHERE future supplies will be found.

There is so much gas found in the Rockies basically because there is a tremendous volume of source rocks found in the Cretaceous section. These are in the form of bedded coals and carbonaceous sediments in the regressive cycles of the Tertiary section. There are also oil-prone source rocks at advanced stages of maturity, and at the bottoms of basins these sections have been converted to gas. This is particularly true in the J sandstone reservoir of the Wattenberg field of the Denver Basin, and the Dakota field of the San Juan Basin.

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year low, and the surprisingly strong jump in durable goods orders by 3.3%. Also noteworthy was the fact that incomes in the U.S. rose 0.4% in October after gains of 0.3% in each of the three preceding months. As the U.S. economy goes, so goes the rest of the world.

Asia is about to explode. The governments and banking interests of the Far East are definitely supporting economic growth in this region. The economies of this corner of our world are poised to grow exponentially due to the huge population and the cheap labor force, the manufacturing gains from technology upgrades, and their growing hunger for consumer goods. Supplying energy to Asia’s increasing need for fossil fuels will continue to place growing demands on the supply side for the oil and gas industry. It is interesting to note that crude oil imports in China for the month of September 2003 reportedly were 60% higher than the year before.

I was reading an article in *US News & World Report* a few months ago, about why the rest of the world fears us, and was surprised to discover that the US economy generates almost 50% of the world’s GDP. Also of interest in this article, was that the US is responsible for 47% of the total world military budget. We have the power from both our economic and our military prowess to control the world; consequently most of the world perceives us as the big playground bully. We have a reputation of extracting the allegiance of other nations either through the dollar or the sword. This revelation was made even more evident this summer while spending two weeks in New Zealand. I was astounded with the amount of news about the U.S., both financial and military, that was broadcast in New Zealand. What we do in this hemisphere impacts the world to a much greater extent than I was ever aware.

### Drilling Activity
According to the Baker Hughes Rotary Rig Count, drilling rig utilization continues to improve in North America. Active rig numbers are up 29% overall from year earlier counts, but growth compared to the prior month increased only 1%. Based on other recent month to month comparisons, it appears that the growth has begun to level out. Most of the increases continue to be attributed to wells drilling for gas. This sector has increased 33% from year earlier numbers. Oil was up 13% from year earlier numbers. Offshore drilling continues to be down at -5% from last year. I am still assuming that this lag is due to long lead times necessary to initiate exploration in offshore waters.

Of particular interest is the Regional Seismic Crew Counts. As of November 1, 2003, only thirty-eight out of forty-eight available seismic crews were working. This compares to thirty-seven crews working last month. Surprisingly, the numbers are down considerably from the forty-nine crews working from the...
year earlier period. Almost every deal buyer that I know wants to see 3-D seismic data prior to committing on a prospect. From my perspective this reduction in seismic activity does not bode well for exploration companies looking for quality projects.

Energy Consumption and Demand: As the U.S. economy returns to a strong growth pattern, increasing consumption of energy to fuel the expansion is also forecast. The business side of me is excited about the growth potential for our industry. The patriotic side is concerned that high energy costs could cripple the recovery and contribute to a slowdown or a halt to the economic momentum.

Current U.S. petroleum consumption stands at 19.7 MMBO/D. Imports are 10.5 MMBO/D, or 53.3% of the total. For 2004, U.S. petroleum demand is projected to grow by 420,000 BBL/D, or 2.1%, to an average of 20.35 MMBO/D, while average U.S. production is expected to decline by 78,000 BO/D or 1.4%.

For natural gas, consumption is at 22,190 BCF/D and imports make up 3.98 BCF/D of that total. Current proved reserves are estimated at 183,460 BCF, which equates to only an 8.3 year reserve supply. A twenty-year supply used to be the norm. Demand for natural gas is projected to grow at a 1.5% annual rate for the next twenty years. Under this forecast, by 2010, demand will exceed 24 BCF. Where will this extra capacity come from?

The National Petroleum Council (NPC), a federal advisory committee to the Secretary of Energy Spencer Abraham, recently completed an 18-month study titled “Balancing Natural Gas Policy - Fueling the Demands of a Growing Economy.” The study concluded that, absent prompt implementation of the specific steps proposed in the study, for the U.S. economy to continue to grow, it will be necessary to increase supplies of natural gas available by at least 3.39 TCF/yr by 2010 and by 5.19 TCF by 2014. A rather “bullish” commentary regarding the NPC study can be found in an Energy Pulse article by Andrew Weissman at www.energypulse.net. I highly recommend that everyone take time to read this article. Mr. Weissman interprets this report to mean that the U.S. will face a severe natural gas supply crisis during the remainder of this decade. Time will tell.

Natural Gas: The more I read about future supplies of natural gas in North America, the greater diversity of opinions I discover. Some are predicting severe shortages by the end of this decade, while some are stating that the recent spot shortages were due to market manipulation and that there are plentiful supplies. Most are moderately bullish on pricing for the remainder of this decade. Based on the past 12 months pricing history, for the short term there appears to be resistance to pricing above $6.00/MMBTU. Above this price, demand begins to decrease. There also appears to be a floor around 4.50/MMBTU.

As of 11/20/03, natural gas storage levels stood at 3155 BCF, up slightly from last years level of 3096 BCF. The mild summer experienced in the Northeastern U.S. lessened the electricity requirements for cooling, allowing operators of storage facilities to replenish inventories depleted during last winter. It is a wait and see attitude as to whether supplies will be adequate should this winter result in comparable demands on natural gas stocks. Based on the $0.90/MMBTU jump in future prices in the past week, it appears that the perception among the forecasters is that supplies are not totally adequate, at least in the $5.00/MMBTU range. I can assure you that, since the price paid to store the gas was above $5.00/MMBTU, none of the gas will leave storage at a lesser price; thereby guaranteeing a floor this winter of $5.00/MMBTU.

Crude Oil: The Energy Information Administration (EIA) (one of the myriad of federal agencies that I had no clue even existed before taking on this position) has predicted that oil prices will remain in the $30.00/bbl range through this winter. Primary logic for the maintenance of pricing in this range is OPEC’s recent decision to cut its production targets by 900,000 bbl, which reduces the chances for a large end-of-year stock build up. U.S. inventories remain dangerously low. Current inventories are at ±293 MMBO. The Department of Energy has targeted 270 MMBO as the minimum operating level.

Energy Legislation

Energy Policy Act of 2003: As reported in an AGI special update: “More than two months of closed-door negotiations between the House and Senate produced legislation that quickly passed the House on November 18th and seemed headed for a quick trip to the president’s desk.” In the Senate, Midwestern Democrats were poised to vote with the Republican majority thanks to large ethanol subsidies in the bill that benefited farmers. But the momentum vanished almost overnight, when an unlikely coalition of Republican senators from... (continued)
New England and the rest of the Senate’s Democrats refused to end debate on the bill and take a final vote.

Some of these legislators like Sen. John McCain (R-AZ) had concerns about the budgetary implications of passing a $31 billion bill. The New Englanders objected to a provision that would shield manufacturers of the gasoline additive MTBE from liability. The substance has been linked to groundwater contamination.

The fractious nature of this debate was indicative of the bill itself, which included many singular provisions to garner support of a region or, in several cases, one lawmaker. But even with these “sweeteners” the bill could not get through the Senate. With freezing temperatures absent throughout much of the country and no spike in fuel prices, there is no public outcry to pass energy legislation. Instead, the bill will stay exactly where it is - teetering on the edge between passage and ultimate defeat until sometime early next year when Congress resumes and the Senate again begins to talk about the merits of the bill.

Not everyone shares the independent oil and gas producer’s excitement of the possible passage of this energy bill. The following are quotes from an editorial written by Tom Teepen with Cox Newspapers: “Republican majorities in the House and Senate have agreed on an energy bill that showers tax breaks, loan guarantees and other goodies on the oil, gas, coal and nuclear industries;” “this is a bill that entrenches reliance on dwindling and polluting fossil fuels and disdains energy conservation and efficiency;” “The bill includes exemptions from the Clean Water Act. It short-circuits environmental reviews and public comment opportunities, and it eases environmental rules to promote energy development on public lands;” and “Who knows what other horrors lurk in the legislation 1,400 pages?" 

State Legislative Activity

Texas: Texas voters approved Proposition Two that amended the Texas Constitution to change the redemption period on foreclosed mineral interests from six months to two years.

Texas legislators continue to fight over redistricting and the governor vows to continue calling special sessions until the issue is resolved. TIPRO has been actively involved throughout the special sessions to ensure the oil and gas industry is represented.

Budget concerns will continue to be a priority among legislators especially with a special session on public school finance scheduled in the spring.

Oklahoma: OIPA’s focus has been on the national energy bill and the impact it will have on the state and the independent producers. One of the major concerns for Oklahoma is whether the provision would be reinstated which grants Indian control over energy development on tribal lands. It would be cumbersome to oil and gas development in Oklahoma, which has thirty-nine Indian tribes.

A provision that requires 5% income tax withholding for distributions to out-of-state members that are not federally taxed as corporations was part of a tax bill that was passed in the final days of the 2003 Oklahoma Legislature. This provision could increase administrative costs for the oil and gas producer as well as discourage out-of-state investors.

Colorado: In order to take a forward-looking approach to managing energy resources on public lands, the federal government has proposed a Rocky Mountain Energy Council. The federal government’s intent is to bridge policy development with itself and the mountain states.

Two favorable court decisions occurred this summer. Delta County civil rights claims made by drilling opponents were dismissed in Denver. The other favorable decision involved advanced approval of drill sites by surface owners, including advanced compensations for damages.

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Another issue which has arisen relates to potential imposition of local regulation over gathering systems. COGA is seeking uniformity on this issue.

**Kansas:** The oil and gas industry is anticipating that some previously rejected legislative proposals will be back on the table in the future. If the state’s fiscal outlook is still shaky, all sales tax exemptions could be revisited again. SB 267 may also reappear. This bill is to outlaw percent contracts for natural gas processing.

The Department of Revenue set the price bulletin for crude oil at $23.50, an increase of $7.00 from a year ago. This will increase the tax burden for oil properties but with the volatile conditions in the past year, the price set seems to be a fair compromise.

**New Mexico:** A priority for the NMOGA is to increase accessibility to federal lands for oil and gas development. The association has been working closely with the BLM to expanding leases and reducing backlogs of drilling permits.

**Mountain States:** HR 2036 was introduced and would amend the combined Hydrocarbon Leasing Act of 1981 and would permit the Secretary of Interior to issue leases for conventional oil and gas development in designated tar sand areas in Utah.

The BLM has set guidelines to help in resolving conflicts between coalbed natural gas development and coal mining in the Powder River Basin.

A proposed pipeline to run from Cheyenne, Wyoming to Greensburg, Kansas is being protested by environmental organizations.

**California:** Former Governor Gray Davis signed legislation to prohibit the use of barges and tankers to transport offshore oil produced in the state. The only “acceptable” means of transportation is by pipeline.

**SB 18**, a proposal to grant the Native American Heritage Commission decision-making authority over California land-use planning, was defeated.

The California legislature passed a bill that requires facilities in the state to continue to comply with the state’s emission requirements that are stricter than the federal government requirements. The new law bars local air pollution control districts from implementing provisions of the Clean Air Act and to continue using state standards.

**Illinois:** A state sales tax exemption for exploration equipment was lost during the regular session and producers are looking for a fall veto session to reinstate it. Also hurting the industry were increased EPA fees for water, air and solid waste permits and the transfer of money from oil and funds to the state’s general budget.

**Ohio:** A bill has been introduced into the Ohio General Assembly granting the Division of Mineral Resources Management exclusive authority for regulating the permitting, spacing and location of oil and gas wells. The bill’s goal is to reduce the confusion and red tape in permitting new wells and thus increase production in the state as is occurring in the neighboring states.

**Louisiana:** The state has enacted a new law that requires surface damage awards to be paid to the court registry to enable the court to ensure payments go toward funding the sites evaluation and remediation.

**National Issues:** The Federal Energy Regulatory Commission (FERC) granted a license to Sempra Energy for the first new liquefied natural gas (LNG) terminal in 25 years. The new facility will be built in Hackberry, Louisiana at an estimated cost of $700 million.

A bill has been introduced by Representative “Butch” Otter of Idaho that would allow the secretary of interior discretion on designating critical habitat for endangered species. This bill (HR 2602) requires peer-reviewed science and data from property owners before designation as critical habitat can take place.

### Environmental News

- **Utah Gov. Mike Leavitt (R) Sworn in as Administrator of EPA**

  Former Utah Governor Mike Leavitt, was sworn in as the administrator of the EPA on November 14 by acting EPA Administrator Marianne Horinko. In his first message to the agency, Leavitt explained that his approach to environmental management can be captured in one word: balance. “We need to balance the needs of the environment and the needs of humanity . . . balance the needs of this generation and the next.”

  During the confirmation process, Leavitt emphasized his strengths of collaborative environmental management, his commitment to air and water quality, land conservation and his dedication to ensuring effective stewardship of our natural resources. On October 28, he was confirmed by an overwhelming majority of the U.S. Senate (88-8) to serve at the helm of the EPA.

  Leavitt’s insistence on local input into federal issues can be traced to his Western roots. He reflects the sympathies of many Westerners, who feel Eastern politicians do not understand the Western way of life, but have nevertheless imposed on them big-government agendas which they do not support. Leavitt replaces New Jersey’s Christie Whitman and, in tandem with Colorado-native Interior Secretary Gale Norton, ensures strong representation of Western viewpoints on environmental issues.

  “Like Whitman, Leavitt is a Republican governor with something of a moderate reputation,” observed Jonathan Adler, Assistant Professor of Law at Case Western University. “Unlike Whitman, however, Leavitt has actually gotten his hands dirty in environmental policy, calling for greater state involvement and authority.”

  (EPA, The Heartland Institute, yosemite.epa.gov/opa/admpress.nsf, www.heartland.org)

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• **Clean Air Act Settlements Under Petroleum Refinery Initiative**

The Justice Department and EPA announced comprehensive Clean Air Act settlements with Coastal Eagle Point Oil Company, CHS Inc. (Cenex), Ergon-West Virginia Inc. and Ergon Refining Inc. These companies have a collective production capacity of 285,000 barrels per day and will reduce air emissions by 3,900 tons per year under terms of settlements being filed with U.S. District Courts in New Jersey, Montana and Mississippi.

These agreements, which will affect 3% of domestic refining capacity, address nitrogen oxide, sulfur dioxide, particulate emissions and other hazardous air pollutants, including benzene, at refineries located in Vicksburg, Mississippi, Laurel, Minnesota, Westville, New Jersey, and Newel, West Virginia. The refiners will pay $2.9 million in civil penalties and implement environmental projects valued at over $1.6 million. The states of Mississippi, Montana, New Jersey and West Virginia actively participated and are joining in these settlements.

These settlements are the latest in a series of multi-issue, multi-facility settlements being pursued by EPA under its Petroleum Refinery Initiative. In the past three years, several major refiners have entered into global settlements, accounting for 37 refineries and 35 percent of domestic refining capacity.

The Justice Department and EPA also announced a separate agreement with National Cooperative Refining Association. The penalty and environmental projects are collectively valued at over $1.8 million. The State of Kansas participated and will join in this settlement. (yosemite.epa.gov/-admpress.nsf)

• **EPA Approves New Source Rules for Clean Air Act**

The EPA's proposed adjustments to the New Source Review rules of the Clean Air Act have received final approval. The announcement ended a month long reconsideration process and two year debate within the EPA about how to most effectively enforce the clean air laws.

The Clean Air Act requires power companies to install the best available pollution control technology when building or upgrading a plant. Minor upgrades falling under the category of routine maintenance are exempt from the requirement.

Under the old NSR rules, companies were uncertain as to whether investments in maintenance and repair would be significant enough to require purchase and installation of new anti-pollution equipment. As a result, routine maintenance was frequently delayed or cancelled. Those companies that did perform routine maintenance often found themselves being sued by the federal government.

Under the new NSR rules, companies are not required to purchase and install the most advanced technology when they replace equipment, provided that the cost of the replacement equipment does not exceed 20% of the cost of replacing the plant’s essential production equipment, and provided that the replacement equipment is the functional equivalent of the worn out equipment.

The creation of a fine-line rule was welcomed by industry officials, who would rather know in advance of routine maintenance what the law does and does not require. (www.heartland.org)

• **Supreme Court Declines Suit Challenging Six National Monuments**

The U.S. Supreme Court has declined to hear a challenge to former President Clinton’s use of the Antiquities Act of 1906 to declare more than 2 million acres in four western states off limits to development. The Mountain States Legal Foundation and the Blue Ribbon Coalition filed the suits after President Clinton designated six national monuments in Washington, Oregon, Colorado and Arizona in 2000 and 2001. The suit contended that the Antiquities Act allowed the president to designate national monuments only to protect “scientific” and “historic” items, and limited the size of presidential designations to “the smallest area compatible with protecting the resource.” However, U.S. District Judge Paul Friedman of the District of Columbia dismissed MSLF’s suit in 2001, and the U.S. Court of Appeals for the District of Columbia, dismissed it the following year. The Supreme Court’s ruling came in October as one of 2,000 petitions the high court declined without comment.

• **BLM Won’t Designate New Wilderness Areas**

The BLM has issued a pair of instruction memoranda (IM) indicating the agency will not designate new wilderness study areas through its land-use planning process. This implements an April settlement between BLM and the state of Utah in Utah v. Norton and could allow oil and gas exploration on millions more acres of federal land. The IM applies to all BLM lands except Alaska, 6.5 million acres of wilderness areas designated by Congress, 15.5 million acres of WSAs already established by BLM or Congress, and any other lands subject to specific provisions of law that direct BLM to manage those lands as if they were wilderness.

• **Utah BLM lands in November Lease Sale**

The BLM will auction rights to drill for oil and gas on more than 17,000 acres, mostly in the Book Cliffs region of eastern Utah. The lands became available when an agreement was struck in April between Interior Secretary Gale Norton and then Utah Governor Mike Leavitt to resolve a lawsuit the state had filed against the department. (AP, Midland Reporter-Telegram, Sunday, November 16, 2003)
• Groups Sue to Stop Montana CBM Drilling

The Northern Plains Resource Council, Tongue and Yellowstone Irrigation District, and the Montana Environmental Information Center have sued Montana regulatory agencies, alleging they violated the state’s constitution by authorizing up to 26,000 coalbed natural gas wells in southeastern Montana. The suit alleges the state failed to ensure beneficial use of groundwater by allowing companies to drain aquifers by as much as 600 feet; failed to require best available control technologies to minimize air pollution and damage to soil, plant life, agriculture, wildlife and water; and failed to require reclamation plans and bonds for wastewater impoundments, roads, well sites, transmission corridors and disposal sites. Although the groups have filed for a permanent injunction against further CBM development in the area, they do not plan to seek a restraining order against operators.

• Ohio Bans Lake Erie Directional Drilling Until 2006

Directional drilling for oil and natural gas under Ohio’s portion of Lake Erie will be banned until at least 2006 as a result of an executive order signed by Republican Governor Bob Taft. The Ohio ban supplements a federal ban due to expire in 2005.

Energy experts estimate directional drilling from Lake Erie’s Ohio shore could yield 20 BCF every year. Several companies had already inquired about obtaining drilling permits prior to Taft’s ban. Opponents of the ban point out that widespread drilling from both onshore and offshore continues on the Canadian side of Lake Erie. (www.heartland.org)

• Watershed Protection Ordinance is Rejected in Colorado

The Grand Junction City Council has rejected a proposed ordinance that would have required operators to obtain “watershed permits” before drilling oil and gas wells. The ordinance would have mandated permits for a wide range of activities adjacent to and five miles upgradient of the city’s water supply system. The ordinance was designed to block a drilling project on the slopes of the Grand Mesa, which is on federal lands outside Grand Junction’s municipal boundaries. The proposal would have required a hydrological analysis and mitigation plan as a permit condition. “If this had passed, it could have set a dangerous precedent for other areas of the Western Slope,” commented the Colorado Oil and Gas Association.

• Texas, New Mexico Hope to Update Pit Rules

In the spring of 2002, representatives of the Railroad Commission traveled to Midland to conduct an information session on proposed changes to Statewide Rule 8. A focus was on changes to rules regarding pits. Additional testimony was taken later in the year and no action has yet been taken.

One point of controversy was the thickness of pit liners, which the commission set at 12 millimeters. “That’s not an off-the-shelf thickness, while 6 millimeters is,” said Morris Burns, executive vice president of the Permian Basin Petroleum Association.

The New Mexico Oil Conservation Division has held hearings on pit lining rules that included proposals from industry groups, regulators and environmental groups. The goal is to permit all pits and include construction standards.

After the hearing, New Mexico’s commissioners will decide how and when to implement new rules.

(Midland Reporter-Telegram, Sunday, November 16, 2003)

Sources for this report are American Oil and Gas Reporter, and various news articles and websites mentioned.
M Driller – $500

Donald C. Gifford – Dallas, TX
Robert M. Grace – Midland, TX
John E. Scherer – Midland, TX
Gene Van Dyke – Houston, TX

M Prospector – $250

Brian P. Arabie – Lake Charles, LA
Michael N. Austin – Broomfield, CO
William C. Bahlburg – Plano, TX
James B. Bennett – Houston, TX
Richard W. Boeckel – New Orleans, LA
Willbur C. Bradley – Wichita, KS
Herbert L. Brewer – Dallas, TX
Paul W. Britt – Sugar Land, TX
Johnnie B. Brown – Midland, TX
Robert W. Buehler – Garden Ridge, TX
William C. Burkett – Midland, TX
Brian S. Calhoun – Corpus Christi, TX
David G. Campbell – Oklahoma City, OK
A.T. Carleton, Jr. – Midland, TX
James S. Classen – Boise, ID
James R. Cleveland – Dallas, TX
William J. Coffman – Norman, OK
Rex D. Copple – Plano, TX
Robert D. Cowdery – Wichita, KS
Douglas J. Cristina – Mandeville, LA
Marshall C. Crouch III – Denver, CO
Michael G. Cruson – Golden, CO
Edward K. David – Roswell, NM
Lawrence H. Davis – Oklahoma City, OK
George A. Donnelly, Jr. – Midland, TX
Ralph C. Duchin – Tucson, AZ
Arlen L. Edgar – Midland, TX
James P. Evans III – New Orleans, LA
David A. Eyler – Midland, TX
Robert B. Ferguson – Lake Forest, CA
Roger A. Freidline – Midland, TX
Earl E. Gaertner – Durango, CO
Lucius C. Geer – Houston, TX
Thomas E. Gentry – Midland, TX
William T. Goff III – Denver, CO
Patrick J.F. Gratton – Dallas, TX
Peter G. Gray – Lafayette, LA
Willard R. Green – Midland, TX
Mark E. Gregg – Houston, TX
Frank W. Harrison, Jr. – Lafayette, LA
E. Stuart Hastings – Houston, TX
Scott G. Heape – Dallas, TX
James H. Henderson — Dallas, TX
Terry L. Holraith – Oklahoma City, OK
J.D. Hughes – Austin, TX
Alfred James III – Wichita, KS
Leonard E. Jordan – Shreveport, LA
William M. Kazmann – Richardson, TX
Robert C. Leibrock – Midland, TX
J. Phil Martin, Jr. – Spring, TX
Roger L. Martin – Wichita, KS
Barney C. McCasland, Jr. – Midland, TX
Philip J. McKenna – Littleton, CO
Patrick H. McKinney – Houston, TX
David M. Mitchell – Midland, TX
Mark K. Mosley – Austin, TX
Marvin A. Munchrath – Lafayette, LA
Fred L. Oliver – Dallas, TX
Robert B. Owen – Corpus Christi, TX
Arthur J. Pansze, Jr. – Golden, CO
H. Rudy Parkison – Dallas, TX
Lloyd K. Parrish, Jr. – Wichita, KS
H.W. Peace II – Oklahoma City, OK
Robert L. Prichard – New Orleans, LA
Harry Ptasynski – Casper, WY
John M. Rakowski – Lakewood, CO
Dwight S. Ramsay – Lafayette, LA
Julius M. Ridgway – Jackson, MS
A. Scott Ritchie – Wichita, KS
Deborah K. Sacrey – Houston, TX
C. Randall Schott – Houston, TX
Rudolf B. Siegert – Slidell, LA
Daniel L. Smith – Houston, TX
Marion E. Spitzer – Carrollton, TX
Jerry S. Stokes – Colleyville, TX
Tony R. Stuart – Hattiesburg, MS
John F. Sulik – Corpus Christi, TX
William D. Trumbly – Norman, OK
G. Clint Wainwright, Jr. – New Orleans, LA
Scott A. Wainwright – Metairie, LA
Wayne E. Walcher – Wichita, KS
John W. Walter – Dallas, TX
Donald C. Wambough – Midland, TX
Robert L. Williams, Jr. – Albuquerque, NM
James M. Zoklewicz – Metairie, LA

M Investor – $100

Craig W. Adama – Fort Worth, TX
Arthur E. Anderson – Lafayette, LA
Karl E. Becker – Wichita, KS
Foy W. Boyd, Jr. – Midland, TX
Nance G. Creager – Midland, TX
Weston C. Ewan – Wichita, KS
C. Randall Schott – Houston, TX
John F. Walter – Dallas, TX
Robert L. Williams, Jr. – Albuquerque, NM
James M. Zoklewicz – Metairie, LA

M Scout – $50

John T. Abney – Tulsa, OK
Arthur L. Bear – Houston, TX
Orville R. Berg – Shreveport, LA
Louis C. Bortz – Denver, CO
Charles T. Bryan – Dallas, TX
Arthur N. Budge – Dallas, TX
Jack C. Cartwright, Jr. – Midland, TX
Kirby L. Cockerham – Greenwood Village, CO
James W. Denny – Houston, TX
Douglas R. Essler – Dallas, TX
Bruce W. Fields – Corpus Christi, TX
Leonard S. Fowler – Richardson, TX
Clement E. George – Midland, TX
George R. Grisemer – Corpus Christi, TX
Albert R. Hensley – Rockwall, TX
Larry L. Jones – Houston, TX
John D. Kullman – Midland, TX
Henry C. Libby – Midland, TX
Richard R. Lindsly – Frisco, TX
L.A. McCord – Norman, OK
James W. McKee – San Antonio, TX
Eric L. Michaelson – Midland, TX
Harry A. Miller, Jr. – Midland, TX
Wayne D. Miller – Midland, TX
John F. Parrish – Houston, TX
Paul H. Pause’ – Midland, TX
Elwin W. Peacock – Houston, TX
Hugh C. Pendery – Dallas, TX
Wes B. Perry – Midland, TX
Norman D. Raman – Midland, TX
Eddie W. Rheas – Dallas, TX
Perry O. Roehl – San Antonio, TX
James A. Savage – Dallas, TX
Dean E. Sebree – El Dorado, KS
Vinton H. Sholl – Houston, TX
J. Keith Somerville – Midland, TX
John J. Taylor – Odessa, TX
Michael R. Vasicek – Midland, TX

Allen J. Owings – Clear Lake Shores, TX
Robert E. Pledger – Houston, TX
John W. Raine III – Lafayette, LA
Edward G. Reigle – Midland, TX
William F. Reynolds – Wichita Falls, TX
Robert M. Sanford – Irving, TX
Wayland C. Savre – Houston, TX
William M. Smith – Houston, TX
Stephen A. Sonnenberg – Lakewood, CO
Richard W. Thompson, Jr. – Plano, TX
C.G. Tyner – Tomball, TX
James P. Walker – Oklahoma City, OK
W. David Willig – Houston, TX
Mark D. Wilson – Midland, TX
John C. Worley – Rockport, TX
DENVER

William A. Miller, #2736, owner of Miller Consulting Services, spoke to the Denver Chapter of SIPES in November at the monthly luncheon meeting held at the Wynkoop Brewery in lower downtown Denver. His presentation was titled “3-C 3-D Seismic Characterization of the Eva South Morrow Sand Unit, Texas County, Oklahoma.” The Eva South Morrow Sand Unit produces from Pennsylvanian Upper Morrow sandstones trapped against a regional fault system. Discovered in 1960, the field produced over 1000 MBO from 9 wells up until a waterflood was initiated in 1992 by Ensign Operating. An additional 800 MBO was produced after the waterflood. In order to further delineate the field in support of additional in-field drilling, a 3-dimensional (3-D), 3-component (3-C) seismic survey was acquired over the field to investigate the utility of converted-wave seismic data in this geologic setting. The results of the survey were presented.

As is the annual tradition, the December luncheon meeting was replaced by the Denver Chapter annual Christmas party held at the Southglenn Country Club in Centennial, Colorado. A gathering of Chapter friends enjoyed an evening of good food and spirits.

The Denver Chapter officers for 2004 are: Chairman Lon McCarley; Vice Chairman/Program Mike Cruson; Treasurer Sue Cluff; Secretary Bill Miller; Membership, Mike Austin Attendance, Keith Drouillard; National directors are Mike Austin and Bill Goff.

Bill Miller
Secretary

MIDLAND

The Midland Chapter finished off 2003 with monthly lunch meetings in October and November. As is customary for the Chapter, no meeting was held in December. In addition, the Chapter co-sponsored a social mixer and barbecue at Kessler’s on November 13. This was our second year to participate in this event. The other sponsors are the Permian Basin Landmen’s Association and the West Texas Geological Society. Although it was a cool and rainy evening (in Midland?) spirits were warm with the assistance of multiple kegs of beer, great barbeque, and Kessler’s blazing fireplaces. All had a great time, and most members were able to return to work the next day - some later than others.

Due to construction at Midland Country Club, Chapter meetings have been moved to the Petroleum Club downtown temporarily. If you are visiting Midland around the third Wednesday of the month and want to attend one of the local Chapter meetings, be sure to check the national website so that you will wind up in the right place.

The luncheon speaker for our October meeting was Morris Burns, executive vice president of the Permian Basin Petroleum Association. He is a graduate of the University of Texas. Mr. Burns was president of FerreTronics, Inc. from 1980 to 1986, and he is past executive vice president of the West Central Texas Oil and Gas Association. He has served on the Interstate Oil & Gas Compact commission by appointment from then-Governor George Bush, and is a member of the board of directors of the Permian Basin Oil Show, in addition to many other civic activities. Morris has been in his current position since 1997. He updated local members on energy legislation and trends in legislation at both the federal and state level.

For November, the local chapter enjoyed a change of pace with a talk on sulfuric acid cave formation. Our speaker was Carol Hill, author of the books Cave Minerals of the World, Geology of Carlsbad Cavern, and, Geology of the Delaware Basin. Currently she is an adjunct professor at the University of New Mexico and is working on the caves and mines of the Grand Canyon. Carol was featured on the NOVA “Mysterious Life of Caves” show aired in the fall of 2002 on PBS.

Ms. Hill educated local members on sulfuric acid caves and their relationship to hydrocarbons in the evaporite-rich Delaware Basin. Carlsbad Cavern and Lechugilla Cave in the Guadalupe Mountains of New Mexico were discussed as excellent examples of this type of cave. Carol’s work has determined that sulfur isotope values of gypsum and sulfur in Guadalupe caves closely match those in an actively-forming sulfuric acid cave - the Cueva de Villa Luz of Tabasco, Mexico. This cave is significant for its relationship to hydrocarbons in the Gulf of Campeche. In Villa Luz, the pH of drip water can reach zero, and concentrations of H2S in the air can reach many parts per million. A brief discussion of “sulfuric acid oilfield karst” was also presented. Ms. Hill piqued the imagination with her description of the dynamic process at work in nature, and their relationship to the formation and entrapment of hydrocarbons. It was a very entertaining and enjoyable presentation.

Up next for Midland is a look at the state of the art in mud-logging, and our annual spouse’s night meeting in February. Local members look forward to seeing many of you at the national meeting in San Antonio in March. Hope to see you there!

Marc Maddox
Secretary
LAFAYETTE

During the month of October the Lafayette Chapter hosted their annual dove hunt in Welsh, Louisiana. Though the birds were not as plentiful as last year, we made up for it in serving rib-rubbing tasty barbecue with plenty of tale-telling to make Mark Twain proud. Thanks again to Ellis Guilbeau and David Bieber for all their help.

Our November meeting was well-attended to listen to Dr. Tim Duex of the University of Louisiana who spoke about our most important fresh water aquifer - the Chicot Aquifer. Tim did a wonderful job defining the limits of the reservoir, and the problems we face keeping it free of pollution for future needs. Thanks Tim.

December was the month of our annual Christmas party which was attended by more than forty people. It was held at the Petroleum Club and enjoyed by everyone.

New Lafayette Chapter officers for 2004 are Chairman Bill Finley; Vice Chairman Jim Gamble; and Secretary/Treasurer David Dupre. Pete Klentos will be our new national director.

Jim Gamble
Vice Chairman

WICHITA

The Wichita Chapter’s officers and directors for 2004 are as follows: Chairman, Terry McLeod; Vice Chairman, Dan Reynolds; Treasurer, Doug McGinness II; Secretary, Orvie Howell; and Membership, Pat Deenihan.

The Annual SIPES picnic was held on Friday, October 24 at Terry McLeod’s compound on the banks of the Arkansas River near Mulvane, Kansas. The event was well attended and a good time was had by all.

The Chapter’s first annual Christmas party was held at the Wichita Petroleum Club on December 16. The party was attended by members, prospective members and spouses. We plan to make this a traditional annual social event.

Doug McGinness II is finalizing plans for a symposium on gas contracts that will be held in the near future. Featured speakers will be experts in the field of gas purchasing and negotiation of gas purchasing contracts.

Orvie Howell
Secretary

CORPUS CHRISTI

After our plans for an October speaker fell through, Mike Lucente, #2984, was asked at the luncheon meeting to extemporaneously speak about his company’s significant new field discovery in Hidalgo County, Texas. The ensuing discussion covered two very interesting areas, (1) the unique geology of the North Los Torritos field and (2) the history of the prospect’s generation, leasing, fund raising, and drilling. Mike worked as an explorationist for Getty and Edwin L. Cox between 1978 and 1993, when he formed his own exploration company, LMP Petroleum. LMP explores for oil and gas prospects along the Texas gulf coast.

Michael A. Fogarty, #1720, a SIPES Foundation Distinguished Speaker was our speaker for November. He presented his program entitled “Examples of Fluvial and Shallow Marine Sequence Stratigraphy from Low Cost High Resolution 3D Seismic Data.” Michael has been working in oil and gas geology and geophysics since 1972, first with Gulf Oil Corporation and later with a series of small independents, and finally, since 1985, as an independent himself. He has generated prospects where he has integrated large geological databases, detailed geological models and inexpensive high-resolution 3D seismic data. Today he explores in ten states and offshore using these techniques.

New officers for 2004 are as follows: Chairman, Eduardo A. Riddle; Vice Chairman, Brent Hopkins; Treasurer, Mike Bergsma; Secretary, Ed Egger; National Representative, Bernie Brauer; and Past Chairman, Duncan Chisholm

The annual Corpus Christi SIPES Chapter Christmas Party was held in conjunction with our December meeting on Tuesday evening, December 16 at the Corpus Christi Town Club. Cocktails were served while the members and their guests enjoyed the singing of Christmas Carols by the choral group “The Full House” in which our own Robert Valerius is a member. Dinner was a choice of prime rib or the catch of the day. The speaker was Frank Cornish, long an avid coin collector, who spoke on the “Gold Coins of the United States.”

Duncan Chisholm
Past Chairman

SIPES Foundation Donor Awards

The SIPES Foundation is pleased to honor donors listed below who have supported the Foundation with cumulative gifts from 1991-2003 at the following levels:

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Jim Gamble
Vice Chairman
DALLAS
The Dallas chapter started the last quarter of 2003 with an informative presentation from Mark Worthy, Denbury Resources, Inc., on CO2 Flooding-Mississippi. CO2 is one of the most efficient tertiary recovery mechanisms for producing crude oil. Denbury has 6 fields, 5 in Mississippi and 1 in Louisiana, along a 183-mile CO2 pipeline from Jackson Dome, which is either under CO2 flooding, or are candidates for.

Robert Ransone, Well Spring Partners, finished out our year in November with his talk on “Current Energy Markets.”

On December 6, the Chapter celebrated its annual Christmas party at the Dallas Petroleum Club. Once again we had a great turnout and it was a good start to the holiday season. Many thanks to Sirman Hollabaugh, activities chairman, for a wonderful party and to those who contributed donations to make sure the party was an even greater success.

Mark Rainer
Secretary

October guest speaker Mark Worthy of Denbury Resources, Inc.

Chapter News Continued

SIPES Chapter Meeting Information

ARK-LA-TEX
Chairman: Ralph Richardson
Secretary/Treasurer: Dan Scurlock
Meets: Petroleum Club
Smackover Room
4th Tuesday

AUSTIN
Chairman: Bill Walker
V-Chrmn: TBA
Secretary: TBA
Treasurer: Bill Walker
Meets: Various Locations
3rd Wednesday

CORPUS CHRISTI
Chairman: Ed Riddle
V-Chrmn: Brent Hopkins
Secretary: Ed Egger
Treasurer: Mike Bergsma
Meets: Town Club
Last Tuesday of month

DALLAS
Chairman: Jerry Watkins
V-Chrmn: Eddie Rhea
Secretary: Mark Mathisen
Treasurer: Richard Thompson
Meets: Royal Oaks Country Club
3rd Tuesday

DENVER
Chairman: Lon McCarley
V-Chrmn: Mike Cruson
Secretary: Bill Miller
Treasurer: Sue Cluff
Meets: Wynkoop Brewing Co.
4th Thursday

FORT WORTH
Chairman: Phil Carlisle
V-Chrmn: Steve Poe
Secretary: Steve Poe
Treasurer: Keith Shirley
Meets: Various Locations
2nd Tuesday

HOUSTON
Chairman: Phil Martin
V-Chrmn: Wulf Massell
Secretary: Jeannie Mallick
Treasurer: Larry Rairdon
Meets: Petroleum Club
3rd Thursday

LAFAYETTE
Chairman: Bill Finley
V-Chrmn: Jim Gamble
Secretary/Treasurer: David Dupre
Meets: Petroleum Club
2nd Wednesday

MIDLAND
Chairman: Robert Thompson
V-Chrmn: Jack Naumann, Jr.
Secretary: Marc Maddox
Treasurer: Michael Sura
Meets: Midland Country Club
3rd Wednesday

NEW ORLEANS
Chairman: Bob Murphy
V-Chrmn:
Secretary: Billy Geen
Treasurer: Tom Klekamp
Meets: Fairmont Hotel
3rd Tuesday

OKLAHOMA CITY
Chairman: Tom Smith
V-Chrmn: Tom Rowland
Secretary: Suzanne Rogers
Treasurer: Victor Cooper
Meets: The Petroleum Club
Bank One Bldg., 35th Floor
1st Wednesday

SAN ANTONIO
Chairman: Bill Wilbert
V-Chrmn: Linda Ewing
Secretary/Treasurer: Joe Finger
Meets: Petroleum Club
3rd Thursday

WICHITA
Chairman: Terry McLeod
V-Chrmn: Dan Reynolds
Secretary: Orvie Howell
Treasurer: Doug McGinness II
Meets: Petroleum Club
Meeting date varies
NEW ORLEANS

Three different meeting forums concluded the New Orleans Chapter’s 2003 agenda. Our October monthly luncheon was a fact-filled effort to keep the membership current on seismic/log interpretation applications. John Love, a senior geologist for Seismic Micro-Technology, skillfully overviewed EarthPAK and 2d3dPAK emphasizing their facilitation of a quick and comprehensive geologic and geophysical interpretation with Windows-based software.

In November, the Metro New Orleans area oil industry came together for the annual API-Delta Joint Industry luncheon. This year’s speaker, Vince Cottone, is chairman of the Gulf Safety Committee. His timely presentation “Fighting Terrorists in the Gulf,” overviewed the formation of the committee and the recent security regulations affecting the offshore industry. This was also a good networking opportunity as members of all the energy associations in the Greater New Orleans area were in attendance.

A favorite of all members is our traditional Christmas luncheon meeting held December 16, at the festive Fairmont Hotel. Potential new members joined the membership for what was an enjoyable event, filled with levity and good food, to kick off the holiday season.

New Orleans Chapter SIPES is proud to again endorse the Gulf Coast Energy Marketplace. This second annual event will be held April 6-7, 2004 at the Fairmont Hotel, New Orleans, Louisiana and will again provide an excellent business and networking opportunity for all attendees. Please come and enjoy the good times our city has to offer. For more information go to: www.gcem.net/.

Billy Geen
Secretary
HOUSTON

During the fourth quarter of 2003, the Houston Chapter featured high quality luncheon presentations, a very well-attended continuing education seminar, and we capped the year-end with a Fall Social at the Houston Petroleum Club.

In October, Steven J. Maione presented “Discovery and Petroleum Exploration Significance of Ring Faults Associated with Salt Withdrawal Basins of Early Cretaceous Age in the East Texas Basin.” The discovery of Early Cretaceous ring faults in the East Texas Basin by Coherence Cube processing brings new perspectives to development and exploration drilling in this mature petroleum province. The recognition of the ring fault system organization, and its association with the Lower Cretaceous age salt withdrawal basins, provides a guide to exploration for a variety of structural traps that can occur among the ring faults. The most common trap geometry would be defined by two- or three-way dip closures between a pair of parallel ring faults.

October also featured our continuing education program co-sponsored by the SIPES Foundation. Jeannie Fischer Mallick, #2961, worked very hard to arrange a special appearance by Fred Hilterman who presented his well-received short-course titled “Seismic Amplitude Interpretation.” This was a special offering and included the very complete text by Dr. Hilterman, who first presented this material as a Distinguished Instructor of the SEG and the European Association of Geoscientists & Engineers. A record number of 148 paid attendees made this a most successful event. In a move toward providing the course to those who could not attend, the Chapter’s Executive Committee and the SIPES Foundation approved funds to digitally record the entire seven-hour presentation. Contingent on obtaining funding, the Chapter plans to reformat this presentation as an interactive teaching aid in Power Point to accompany the text book.

Our November luncheon was a joint meeting with the Gulf Coast Section of the Society of Petroleum Engineers and the Houston Energy Council (HEC). The featured speaker, John Gibson, president of Halliburton Energy Services Group presented a well-received and entertaining presentation titled “The Ethics Story Book.” Mr. Gibson is an experienced public speaker who is always well prepared and does not use slides or notes. He called our attention to the many opportunities that business leaders have to use the power of stories within their organizations to drive “right behavior” and build an ethical culture. He used true tales from the oil patch to introduce the tools and techniques that contribute to ethical decision-making. He analyzed several examples of ethical dilemmas by examining each issue from all perspectives, weighing the impacts of various choices, and making thoughtful decisions that send the right messages to constituents. His theme is that people in the oil patch would develop an ability to use stories within their organizations to strengthen ethical values.

Our December luncheon speaker was Thomas E. Ewing of Frontera Exploration Consultants, San Antonio presenting “Review of the Tectonic History of the Lower Rio Grande Border Region, South Texas and Mexico, and Implications for Hydrocarbon Exploration.” (See SIPES August 2003 Newsletter or go to www.sipes.org). Dr. Ewing brings a wealth of experience and insight to this topic as was evidenced by the high attendance.

Wulf Massell
Vice Chairman

A slate of 2004 officers was presented and elected at our October 16 meeting. They are (left to right) Vice Chairman Wulf Massell; Secretary Jeannie Mallick; Chairman Phil Martin; and Treasurer Larry Rairdon.

Our Fall Social featured a welcomed friend of the Houston SIPES Chapter. We were pleased that Michael E. Economides agreed to dine with us and share his views on the current state of the oil industry. He had just returned (one day prior to our event) from Russia. He titled his presentation: “Russian Oil and Gas: A Huge New Story.” Dr. Economides had been well-received when he addressed one of our luncheons in early 2002. Our members and spouses who attended the Friday evening Social met his repeat visit with great anticipation. Economides is known for his best-selling book, The Color of Oil: The History, the Money and the Politics of the World’s Biggest Business.

Our December luncheon speaker was Thomas E. Ewing of Frontera Exploration Consultants, San Antonio presenting “Review of the Tectonic History of the Lower Rio Grande Border Region, South Texas and Mexico, and Implications for Hydrocarbon Exploration.” (See SIPES August 2003 Newsletter or go to www.sipes.org). Dr. Ewing brings a wealth of experience and insight to this topic as was evidenced by the high attendance.

Wulf Massell
Vice Chairman
FORT WORTH

The October meeting for Fort Worth was held on the 16th at the Petroleum Club of Fort Worth. The featured speaker was Dick Banks, president of Scientific Computer Applications, who gave a talk entitled “Essentials of Subsurface Mapping.” This was an informative talk about utilizing computer generated contouring programs, and how they relate positively and negatively to hand drawn maps. Mr. Banks discussed various methods of computer gridding and contouring and how data density and other factors affect gridding and contouring results. He provided some real world examples, and then discussed methods used by a computer that can be beneficial when used as an aid in contouring by hand. The talk was well received by SIPES members and guests.

The November meeting was held on the 20th at the Petroleum Club of Fort Worth. Two new SIPES members, Joe Schindler and Joan Schindler were welcomed into the Fort Worth Chapter at the November meeting.

The speaker at the November meeting was Victor Carrillo, chairman of the Texas Railroad Commission (TRRC). Commissioner Carrillo is a native of Abilene and was appointed to the TRRC in February 2003. He will be running for election in 2004. Politically he is a conservative Republican who believes in limited government.

Commissioner Carrillo believes that the success of the oil and gas industry in Texas and the rest of the nation is critical to economic success in the U.S. The industry must be encouraged to drill and find new resources. Domestic production and environmental diligence are not mutually exclusive. The role of the TRRC is to promote awareness and development of unconventional plays and domestic production.

Commissioner Carrillo talked about the Oil and Gas Migration Project - moving TRRC data from mainframe computers to an open network. He wants to make these data available on the Internet and also enable electronic filing of production data.

Commissioner Carrillo believes that both the U.S. and Texas need an energy plan and he wants to lead the effort to assemble a comprehensive energy policy for Texas. Texas energy policy needs to encourage new technology, have less regulation and more incentives for the oil and gas industry. This energy policy also needs to define the roles of LNG, clean coal, fuel cells and renewable energies - wind, solar and biomass energies. Texas has great renewable energy potential but this will not replace conventional energy sources such as oil, gas and coal. Diversification is the key to energy policy and our future here in Texas.

The talk was well attended and a lively question and answer session was held following the talk.

Fort Worth did not have a meeting in December.

James Talbot
Chairman 2003

IN MEMORIAM

We regret to note the passing of the following members:

Emil J. (Skip) Cswaykus, #1906 of Midland, Texas who died on December 5, 2003

Norman B. DeGraffenreid, #1657 of Oklahoma City, Oklahoma who died on November 30, 2003

James V. Hardwick, #201 of Midland, Texas who died on January 13, 2004

Philip J. McKenna, #1027 of Littleton Colorado who died on January 28, 2004

Thomas J. Nelson, #1154 of Midland, Texas who died on November 30, 2003

Thomas H. Philpott, #300 of New Orleans, Louisiana who died on January 15, 2004

Victor E. Ratliff, Sr., #506 of Edmond, Oklahoma who died on November 6, 2003

Harold L. Summers, #378 of Oklahoma City, Oklahoma who died on February 6, 2004
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Permian Basin Pioneer
In memory of Margery Taylor

*
Where gas is going to be found is:

- In coal beds
- In conventional anticlinal and stratigraphic traps
- In deep-basin accumulations

Most of the effort historically has been based in the exploration for conventional anticlinal and stratigraphic traps, but in the last 15 years there has been a better understanding of deep basin accumulations and there is a lot of emphasis currently being placed on that. Coal bed and deep basin accumulations will be the most important for the future. Additional conventional accumulations will be found but probably not so many and they won’t be so big.

One of the big problems is that quite often many of the conventional and stratigraphic traps are tried to be fitted into deep basin accumulations without understanding that these types are different.

**GAS GENERATION AND ACCUMULATION IN THE CRETACEOUS GEOSYNCLINE**

Figure 1 map shows the distribution of Cretaceous sediments deposited in a continent-size geosynclinal foredeep east of an active thrust belt. Also shown is the area of younger superimposed Tertiary tectonic activity that gave rise to the present-day Rocky Mountain basins and mountainous uplifts. The location of a west-east cross-section across the area is shown, and this cross-section is illustrated in figure 2.

The figure 2 cross-section shows lithologic facies, the occurrence of source rocks, reservoirs and seals, and areas of erosional uplift and burial beneath Tertiary basin sediments.

The Cretaceous section represents a first order depositional sequence that consists of marine transgression, basin infill, and final regression. Transitional continental to marine sandstones are associated with the base and top of the sequence. The core of the sequence consists mostly of marine shale. Second order sequences occur as eastwardly thinning wedges of continental and transitional marine sediments that originate from the thrust belt highlands on the west side of the geosyncline and intercalate with the marine shale core facies.

Gas generating source rocks are present in bedded coals and carbonaceous sediments present within the terrestrial facies forming the core of the second order regressive/transgressive depositional sequences. Coals are also present in the lower parts of the Tertiary section. Although oil-generation-prone source rocks are present in organic-rich marine shales and limestones in the lower part of the Cretaceous section, they have generated gas in basins where they are deeply buried and highly mature.

Reservoirs with matrix porosity are present in the transgressive and regressive transitional marine sandstones. These generally have modest porosity and low permeability and are referred to as typical “western Cretaceous tight gas sands.” Marine shales act as the main seal facies. Coals form reservoirs for coal-bed methane (CBM).

The Ferron is a typical “gas machine” within a second-order Cretaceous depositional sequence (figure 3). Gas source rocks and CBM reservoirs are present in coals. Reservoirs are also present in “tight gas sands” deposited in transitional shoreline environments. Seals are formed by overlying and underlying marine shales, and also by terrestrial sands and shales.

Coals are present in every Rocky Mountain basin. Older transgressive/regressive cycles in the lower part of the Cretaceous section were more deeply buried and pinch out in western part of the geosyncline. Younger cycles at the top of the Cretaceous were never deeply buried and pinch out in successively more easterly positions.

There are two processes for generating gas in coal as illustrated in figure 4. Biogenic gas is created by the action of methane-generating bacteria carried by groundwater into the subsurface. The bacteria partially consume the coal and convert it into gas. Gas generated in this fashion may be expelled to adjacent sandstones. Biogenic gas is characterized by a high proportion of the “light” carbon isotope C12 in the methane molecule. Lower Tertiary coals in the Powder River Basin are characterized by biogenic CBM.

Thermogenic gas is generated from coals as they are thermally-metamorphosed to increasingly higher ranks between those of a high-volatile bituminous A coal and anthracite. High-rank coals generate very large amounts of (continued)
gas. Some of this is retained in the coals as CBM, but most of it is expelled to nearby sandstone reservoirs. Thermogenic gas is characterized by a high proportion of the “heavy” carbon isotope C13 in the methane molecule. Cretaceous coal and “tight sand” reservoirs in the Green River and San Juan Basins are characterized by thermogenic gas.

Coals begin to “thermally” generate gas when they have reached a high-volatile bituminous rank. When they have reached an anthracite rank, they have generated approximately 8700 standard cubic feet of gas per ton of coal. Coal does not expel all of its generated gas; some is stored in the coal by physical sorption and in micro-porosity. Micro-pore storage is more important in low- rank coals. Gas expulsion occurs only when generated gas volume exceeds storage capacity. Storage volume is a function of temperature and pressure.

Rocky Mountain basins contain treasure houses of coal, and coal ranks are highly variable. Those in the lower part of the Cretaceous have been more-deeply buried and generally have higher ranks than those in the upper part of the Cretaceous. Tertiary coals have never been deeply buried and have the lowest ranks. Anomalously high ranks are associated with high heat flow associated with Oligocene-Lower Miocene volcanism and igneous activity along the Rio Grande Rift.

In-place CBM volumes have been estimated for various Rocky Mountain basins (Scott, 1999). Amounts range from 2 trillion cubic feet (TCF) in the Wind River Basin to 314 TCF in the Greater Green River Basin. The sum total for all basins for which figures are given is 457-551 TCF. Much of this gas is in coal beds at depths greater than 5,000-6,000 feet where cleats (fractures) in the coal are closed and non-commercial flow rates are present. Methods may be developed in the future to exploit the deeper CBM resource.

Figure 5 is a diagrammatic cross-section showing the position of accumulation types in a typical Rocky Mountain basin. Much of the gas found throughout the world is present in conventional “discrete” structural, stratigraphic, and combination type traps on the shallow flanks of basins. The Rocky Mountain area contains large volumes of gas in developed and prospective accumulations situated in unusual positions in the deep synclinal portions of many basins. These have been termed “basin-center,” “deep-basin” and “continuous” type accumulations. These currently constitute one of the principal exploration targets in the Rocky Mountain region. Characteristics of these deep-basin accumulations are summarized as follows:

- Associated with cells of completely gas-saturated reservoirs within or surrounding mature source rocks
- Have updip water-saturated reservoirs and no bottom gas-water contact
- Generally have low matrix porosity and permeability, and the reservoirs are generally fractured to varying degrees
- Accumulations are either overpressured or underpressured

**EXAMPLES OF DEEP BASIN ACCUMULATIONS**

**Eastern Green River Basin**

The Eastern Green River Basin is located in southwestern Wyoming and is comprised of the Red Desert Basin and the Washakie Basin as illustrated in figure 6. These basins exhibit overpressure above a 0.45 psi/foot pressure gradient as indicated by the shaded area. The location of a west-east cross-section illustrated in figure 7 is shown.

Figure 7 is a schematic west-east cross-section of the Mesaverde formation of the Eastern Green River Basin showing unit names, lithofacies, and petroleum system characteristics (source rocks and their maturity, carrier/reservoirs, and seals).

Based on a Burial/Thermal/Vitrinite reflectance maturity (Ro) history model for Hay Reservoir Field in the deep part of the northern Eastern Green River Basin, maximum burial occurred approximately 45 million years before present (MYBP). The start of high rate gas generation occurred
slightly more than 50 MYBP from coals in the central portion of the Mesaverde. The peak rate of gas generation occurred about 45 MYBP, but generation is still currently active.

Various processes contribute to the development of the deep basin accumulation. As a result of thermal kerogen breakdown at various stages of thermal maturity, kerogen volume shrinks and porosity is created and filled with generated hydrocarbons. However, total volume of generated hydrocarbons is greater than the created porosity. Excess fluid volume and compaction of non-equilibrium created porosity cause expulsion from the source rock and create overpressure in a confined system. In the case of gas generated and expelled from coal, much of the generated gas remains in the coal and provides the opportunity for coal-bed methane production. Because the ability of the source and nearby reservoir rocks may not be able to dispose of the volumes generated at critical rates, abnormally high pressure is required to dispose of the material through available permeability. The amount of pressure generated may exceed the fracture gradient of the affected rocks, in which case permeability is increased through the generation of fractures, and pressure will tend to stabilize along the fracture gradient. The creation of pressure-induced fractures may create fractured reservoirs. It may also create fracture breaches through the matrix permeability of confining “seals” and allow vertical hydrocarbon migration out of a primary petroleum system.

**Figure 8** is the schematic west-east cross-section of the Mesaverde formation of the Eastern Green River Basin showing a cell of overpressure created by gas generation in “mature” coals (Ro > 0.73, > 8000 feet of depth). The overpressure cell is confined by marine shales above and below the Mesaverde and by sandstone carrier beds with increased permeability at shallower depth updip from the deep basin pressure cell. All rocks within the pressure cell that can be charged with gas at capillary entry pressure will contain gas saturations compatible with their capillary properties and the ambient pressure. Migration updip from the pressure cell is mainly through more-permeable transitional marine sandstones at the top and bottom of the Mesaverde. The setting of the overpressure cell is the site of a large deep basin gas accumulation; however, commercial production has only been established in “sweet spots” (continued)
at shoreline still-stands in the Almond sandstone at the top of the Mesaverde. Production updip from the pressure cell is confined to conventional stratigraphic traps with downdip water legs in Almond sandstone “bars.”

**San Juan Basin**

The San Juan Basin of northwestern New Mexico and southwestern Colorado provides an example of an under-pressured deep basin gas accumulation. Figure 9 is a map of the San Juan Basin showing the outcrop of the Mesaverde sandstone and subsurface contours on its top, together with the areas of gas production from “mature” coals found in the Mesaverde. The location is shown of a southwest-northeast cross-section illustrated in figure 10.

Figure 10 is a schematic cross-section of the Mesaverde in the San Juan Basin showing unit names, lithofacies and petroleum system characteristics (source rocks and their maturity, carrier/reservoirs, and seals). Note that the top of gas generation “maturity” is inclined. Outcropping coals along the south flank of the basin are immature; those outcropping on the north flank are mature. The central part of the basin is associated with high-rank coals at relatively shallow depths.

Fresh water potentiometric surface contour maps of the Mesaverde in the San Juan Basin show that, with the exception of small areas of artesian overpressure at the northern and southeastern edges of the basin, most of the basin is underpressured and the potentiometric contours are below the surface elevation. A large area encompassed in the northern deep part of the basin defines a “potentiometric sink,” and the large area of ubiquitous gas saturation in the Mesaverde lies within this area.

A Burial/Thermal/ Vitrinite reflectance maturity (Ro) history model in the deep part of the northern San Juan Basin reflects an abnormal heat history peaking at 35 MYBP associated with volcanic activity associated with the San Juan Mountains to the north of the Basin and the Rio Grande Rift to the east. The start of high rate gas generation from coals in the central part of the Mesaverde in the deep San Juan Basin began approximately 50 MYBP. Generation peaked at 45 MYBP but, unlike the Eastern Green River Basin, gas generation ceased about 20 MYBP. The Basin is “dead” and no longer actively generating gas from Mesaverde coals.

During the Eocene-Oligocene-Lower Miocene, a cell of overpressure was created in the San Juan Basin by gas generation in “mature” coals at the time of high heat flow. At this time the overpressure cell was regionally gas saturated and migration occurred updip from the cell, primarily in transitional marine sandstones at the top and bottom of the Mesaverde. The pattern of overpressure gas saturation and migration at this point in time was similar to that now present in the Eastern Green River Basin; however, here the situation occurred at a much shallower depth because of the abnormally high heat flow. Figure 11 is the schematic southwest-northeast cross-section of the Mesaverde in the San Juan Basin showing present day conditions of fluid flow and deep basin gas saturation. The position of the fresh water potentiometric surface below surface elevation indicates strong underpressure created by downdip water encroachment toward the area of deep basin gas. The area of saturation is much smaller (continued)
than that which may have been associated with the precursor overpressure cell. The contraction of the area of gas saturation and creation of underpressure is believed to be related to several processes:

- Gas volume decrease
- Reabsorption into coals as a result of lowered temperatures
- Imbibition of groundwater into the area of gas saturation as a result of vertical gas migration (leakage) out of the Mesaverde gas system

The last process is believed to be the most important and is being accomplished through either extremely low-rate Darcy flow or through molecular groundwater solution/diffusion.

Because the groundwater system in the San Juan Basin is dynamic, it may greatly affect the position of the deep basin gas field according to principles of hydrodynamic accumulation described by M. King Hubbert. According to Hubbert, there exists a relation between the gradient of a potentiometric surface and the gradient of a possible hydrocarbon/water contact.

Psuedo-potentiometric surface and gas migration/entrapment maps for gas in the San Juan Basin based on the application of Hubbert's principals show that the hydrodynamic solution for the area of potential gas entrapment closely matches the area of actual established production.

CONCLUSIONS

Figure 12 is a diagram showing the hypothetical cycle of gas generation, migration, and accumulation pressures related to time. The pattern of deep-basin gas accumulation and anomalous pressure present in Rocky Mountain deep-basin gas accumulations represents a transient cycle of gas charge and loss. The overpressured stage of the cycle, as characterized by the Eastern Green River Basin, is associated with active gas generation in Mesaverde coals. The underpressured stage, as characterized by the San Juan Basin, is characterized by the dissipation of gas from a formally overpressured gas saturated pressure cell after active generation has ceased. A deep-basin accumulation will be present as long as abnormal pressures exist.

There are some key concepts to address and questions to ask relating to the occurrence of deep basin gas accumulations. Is the gas actually trapped in the classic concept of petroleum geology? In other words, do the accumulations occur in traps that require seals, and is the gas static? Or, is the gas in a dynamic state in a time transient accumulation that does not require a trapping “seal?”

Figure 13 is a diagram illustrating a proposed classification of hydrocarbon accumulations that incorporates the concept of dynamic fluid systems.

(continued)
stratigraphic and hydrodynamic). Combination trap types may occur along the edges of the triangle (i.e., structural/stratigraphic; structural/hydrodynamic) or any place within the triangle (i.e., structural/stratigraphic/hydrodynamic—this is the area of Levorsen’s “obscure and subtle trap”). The area at the bottom of the classification pentagon describes conditions under which hydrocarbons accumulate under conditions where both hydrocarbons and groundwaters are dynamic. Critical points in this area are described by overpressured accumulations and underpressured accumulations of the type present in the Eastern Green River and San Juan Basins. The line connecting these two types represents the evolutionary relation between the two as described in the pressure cycle diagram of figure 12. When all gas is depleted from a dynamically shrinking underpressured accumulation, any remaining saturation will be relegated to more conventional traps.

Two statements may summarize the evidence and conclusions reached in this paper:

- Gas systems in the Cretaceous and Lower Tertiary will be of most importance in Rocky Mountain Basins
- Most of the gas will be found in either coal-bed or basin-center-type accumulations

News of Members

Midland, Texas members G. Pat Bolden, #1002, and Donald C. Wambaugh, #121, have been awarded Honorary Life Membership in the West Texas Geological Society. Harold E. Jones, #740, and Mark D. Wilson, #2309, received the society’s Pioneer Award. The WTGS Dedicated Service Award was presented to Sue Tomlinson Reid, #1324.

Brian S. Calhoun, #1586, of Corpus Christi, Texas has been elected 2004-2005 SIPES President. He will assume office on March 17, 2004 during the SIPES 41st Annual Meeting in San Antonio, Texas. Other SIPES National officers for the coming year are Vice President Daniel M. Reynolds, #1457, of Wichita, Kansas; Vice President of Natural Resources David A. Eyler, #2314, of Midland, Texas; Secretary Michael N. Austin, #2366, of Denver, Colorado; and Treasurer Wendy G. Storbeck, #2491, of Midland, Texas.

The SIPES Foundation officers for 2004 are President Daniel M. Reynolds, Vice President Craig W. Adams, #2825, of Fort Worth; Secretary Robert B. Robinson, #2380, of San Antonio; and Treasurer Wendy G. Storbeck of Midland, Texas.

A. T. “Toby” Carleton, #165, of Midland, Texas will receive SIPES Honorary Membership, the Society’s highest award, on March 19th in San Antonio, Texas during the SIPES 41st Annual Meeting. M. D. “Don” McGregor, #87, of San Antonio, Texas and Daniel L. Smith, #1647, of Houston, Texas will receive SIPES Outstanding Service Awards to recognize their history of service to SIPES.

Arlen L. Edgar, #620, of Midland, Texas is the recipient of the Top Hand Award from the Permian Basin Petroleum Association. He was honored for his contributions to the petroleum industry and the community.

Robert G. Font, #2163, of Plano, Texas has been elected president-elect of the American Institute of Professional Geologists.

Richard N. Hargis, #1038, of San Antonio, Texas received Honorary Membership in the GCAGS at the group’s annual meeting in Baton Rouge, Louisiana in October 2003. San Antonio Chapter Chairman, William P. Wilbert, #1412, received the association’s Distinguished Service Award.

Robert M. Leibrock, #994, of Midland, Texas received the Top Pioneer Award from the Permian Basin Petroleum Pioneers during the group’s 23rd biennial reunion in October.

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Following the Midland meeting in my first attempt at creative writing, I mentioned several key items that the 2003-2004 Board of Directors would concentrate their attention. I would like to update the membership on those items:

- Annual Meeting format changes
- New Chapter Initiatives
- Increased Chapter participation
- Newsletter reformatting
- Exposure of our members to industry decision makers

The program brochures for the 2004 Annual Meeting in San Antonio, Texas, March 17-19 have been mailed out to the membership. The attention to detail and effort put forth by both the San Antonio Chapter led by Don McGregor as general chairman, and the national office led by Diane Finstrom is quite obvious from the quality of the book. The sharing arrangement between National and the host chapter has worked quite well. Now it is time for the membership to show its appreciation to both groups by attending the meeting at this wonderful location. It would be very gratifying to have each chapter represented by ten or more members. Reaching this goal would give the Annual Meeting a “national” flavor and start to more accurately reflect a cross-section of our membership. The SIPES Annual Meeting is always a very pleasurable experience and I urge all members to consider attending.

Planning for the 2005 and 2006 meetings is in full swing. The 2005 meeting will be held in Santa Fe, New Mexico from April 27-29, 2005 at the La Fonda Hotel with the host chapter being Oklahoma City. The chapter is currently assembling committees while the National office has already finalized many of the meetings logistics. The 2006 meeting will be held in historic New Orleans, Louisiana from March 22-24. The meeting site will be the beautiful Ritz Carlton Hotel, located on the edge of the French Quarter.

In early December, the Board of Directors meeting was held in Tulsa, Oklahoma. A small cocktail-dinner party was held for current Tulsa members and several guests. The meeting was well attended by current Tulsa area SIPES members and several prospective new members. Perhaps the most asked question by the local attendees was what does SIPES offer me that the many other organizations in town will not. By having the entire BOD present at the function, the attendees received the opinions of members from multiple chapters, each with a little different perspective. The one common thread expressed by the directors was SIPES is an independents’ organization with only the independents’ needs at heart. The weekend was considered a success and follow-up contacts are being pursued. Although the growth of the Tulsa chapter remains a work in progress, the BOD remains cautiously optimistic for its success.

The subject of Chapter Participation remains very high on the Board’s agenda. Through the hard work and creative thinking of Houston Director Paul Britt, numerous attempts to engage the Chapter chairman in correspondence via the Internet and traditional means have been attempted. However, the apparent disconnect between “National” and the local chapters still exists. In response to this issue, the Board has decided to hold their future meetings on dates that will afford the Directors the opportunity to attend the host Chapter’s regularly scheduled monthly meeting. By making this change, the entire Board will have the chance to visit three Chapters per year in an effort to increase interaction with the membership. Until now, the Board has held its meetings over weekends which tended to limit the interaction with the membership of the host chapter. Although this meeting plan represents a significant departure from business as usual, I believe it demonstrates the Board’s willingness to change order increase Chapter and correspondingly, member participation.

The Newsletter has grown to a publication of approximately twenty-eight pages full of information and sporting a new look. The quality of the technical contributions is excellent and the information in the reports made by the vice president of natural resources and the committee chairmen of state legislative and environmental affairs are both very timely and useful. The Newsletter is an excellent way to disseminate information to the membership and in this vein; I am going to propose some changes to the publication to increase member contributions. Additionally, it is hoped these changes could enhance the Newsletter’s appeal for advertising.

In an effort to introduce our membership to the corporate decision makers, the Board has developed and approved a Prospect Generator’s List. The list is designed as a companion to the very successful Most Active Companies List (MACL) and will be provided to companies participating in the MACL. SIPES members can fill out a form describing the type of prospects they develop including the general participation terms, areas or basins, whether seismic is used, etc. Once the list is assembled, it will be provided to all companies participating in the Most Active Companies List. The idea is to provide a connection between deal generators and deal buyers. Specific prospects and their terms will not be included in the list for obvious reasons. Please contact your directors or Diane Finstrom at the National office for details. Information is also available on the website (sipes.org) and in the Newsletter. We strongly urge you to take advantage of this service offered by National.

Another significant piece of business was transacted in Tulsa at the December SIPES Foundation Meeting. The Foundation Board voted to create a royalty pool to supplement the Foundation’s treasury during these times of low interest rates on fixed income securities. The pool gives anyone with royalty or mineral interests the opportunity to participate.
to make a charitable contribution to an extremely good cause.

I urge anyone considering divestment of such an interest to contact new Foundation President Dan Reynolds or Diane Finstrom for information.

At this time, I would like to take this opportunity to thank my fellow directors for an extremely enjoyable and personally rewarding year. Their hard work and passion for SIPES made being president a pleasure. I would also like to thank my predecessors Toby Carlton, Deborah Sacrey and Scott Wainwright for leaving me a smooth sailing ship with no leaks. Finally, I would like to express my sincere appreciation to Diane Finstrom for all her hard work and dedication to SIPES. The high efficiency that Diane runs the business side of the organization allows the president to concentrate on growing, adding and improving member benefits. Thank you, Diane.

I would like to close with this final thought. As a requisite for membership, an individual must be self-employed to join SIPES. Therefore, it stands to reason that SIPES is among a very few organizations truly able to represent the small independent. The National Board of Directors works very hard to develop programs that really do have the memberships' best interests at heart. So get involved in this terrific group and express your ideas and concerns to your directors.

It has been a pleasure serving as your president. May 2004 and beyond be prosperous for all.

Respectfully submitted,
William T. Goff

WELCOME NEW MEMBERS

The following new members were approved by the SIPES Membership Committee from September 4, 2003 to December 4, 2003:

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<th>SIPES Number</th>
<th>NAME</th>
<th>CHAPTER</th>
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<td>Woodruff G. Leel, Jr.</td>
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<td>Glen Alan Pankonien</td>
<td>Houston</td>
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<td>2982</td>
<td>Joan Lee Schindler</td>
<td>Fort Worth</td>
<td>T. Mayfield-Cowan</td>
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<td>2983</td>
<td>Joseph B. Schindler</td>
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<td>T. Mayfield-Cowan</td>
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<td>2984</td>
<td>Michael E. Lucente</td>
<td>Corpus Christi</td>
<td>J. Dewbre</td>
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<td>2985</td>
<td>Rajan Ahuja</td>
<td>Corpus Christi</td>
<td>A. Ahuja</td>
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<tr>
<td>2986</td>
<td>Owen R. Hopkins</td>
<td>Corpus Christi</td>
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<td>2316</td>
<td>Harry T. Pringle, Jr.</td>
<td>Houston</td>
<td>Reinstatement</td>
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<td>2987</td>
<td>Craig M. Ashbrook</td>
<td>At-Large (Abingdon, VA)</td>
<td>A. Scales, CPG G. Collins, PE L. Bristol, RPG</td>
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<td>2988</td>
<td>Michael W. Bergsma</td>
<td>Corpus Christi</td>
<td>T. Jones, Jr. J. Clauthton P. Strunk</td>
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<td>2989</td>
<td>Lloyd W. Towers II</td>
<td>Corpus Christi</td>
<td>R. Andrews</td>
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<td>2990</td>
<td>James B. Jackson</td>
<td>Oklahoma City</td>
<td>Reciprocal</td>
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<td>2991</td>
<td>Peter MacKenzie</td>
<td>At-Large (Worthington, OH)</td>
<td>Reciprocal CPG</td>
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Seismic through Simulation

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Don’t Miss:

- SIPES Foundation Seminar - “So You Want ME to Buy Your Deal?”
- Icebreaker
- Technical Sessions
- All Convention Lunch w/ Bob Tippee, Editor, Oil & Gas Journal
- Spouse San Antonio Art Tour or History Tour
- Trolley/Walking Tour of San Antonio
- Mission Tour with Lunch
- River Barge Rides
- Golf Tournament
- Awards Banquet
- Canyon Lake Gorge /Gruene, Texas Post Convention Trip

Registration book and forms are available at www.sipes.org
ABSTRACTS FOR THE SIPES 2004 CONVENTION
TECHNICAL SESSIONS

Deborah Sacrey — “How I Became a Successful Independent”

There are several key factors to becoming successful in this industry:
1) Networking and volunteerism broaden one's base and exposure to potential
2) Finding a niche market and exploiting it
3) Give talks and lectures or teach classes to let people know you are knowledgeable about a given subject
4) Treat clients fairly and be very honest in your work and opinions
5) Do good deeds for other peers, as it will pay you back in spades, and
6) Keep your "nose clean"! In this industry, if one does not maintain the highest of ethics as a consultant, especially with seismic data, one risks being considered untrustworthy, which is a death-knoll to a consultant!
These 6 "rules" don't always insure success, but will not diminish the opportunities to find it!

Jim Gibbs — “How to Succeed at Property Purchases”

Operators of oil and gas properties often need additional cash for leasehold development or other purposes, but are unable or unwilling to use bank or mezzanine financing. Selling an interest in existing production can be a means of providing capital to accelerate a drilling program or improve project economics. Financing arrangements can be tailored to meet individual requirements.

Pat Gratton — “Maximizing Independent/Consultant Cash Flow on the Margin”

It isn't BOPD or MCFGPD or reserves that pays the bills and allows accumulation of capital. It is after tax daily and cumulative cash that counts. The difference between success and failure in small business is often found at the margin. Use the margin and don't let it use/abuse you!

Stew Chuber — “Making a Living on Small Scale Operations”

Most geologists abhor operations because it takes away from creative time. However, it can put beans on the table and even open avenues for exploration and development.

Don Tobin — “Minerals, Royalties, and Over-riding Royalties: What They Are and How They Can Serve You”

There are many advantages of royalties compared to working interests, and many ways to augment your royalty position. Preparing royalty instruments properly can enhance and protect your interest. Once obtained, royalties can be sold, or purchased, or passed on to your kids. Royalty should be a part of every prospect consideration.

Pete Rose and Sam Gainer — “Converting your Consulting Practice to Your Retirement Fund”

Sole proprietors, or very small partnerships, commonly have invested years of dedicated work and personal investment in building and maintaining their businesses. Approaching retirement age, how can geologists, geophysicists, engineers, or land men convert such long-nurtured businesses into salable entities, so as to monetize the professional practices they have built?

Audience participation follows for those interested in their own exit strategies.

Lee Petersen — “Orbiting the Giant Hairball”

The 20th century notion of cradle-to-the-grave job security with a large company has long been extinct. Employees, independents, and employers will all need greater flexibility and creativity to thrive and succeed in this new environment. The new independent employees will be those with marketable skills but also with the creativity and drive to propose and forge new kinds of employment contracts that will allow them to orbit the corporate bureaucracy without becoming completely ensnared by it.

Dick Sams — “Creative Thinking: An Independent's Method to Make Money”

Creativity is a practice of the mind that relates seemingly unrelated things or observations to each other, then makes use of it. As petroleum geologists we must always be thinking about oil fields, their traps, hydrocarbon charge, and reservoirs; a working hypothesis must emerge. But if our creativity stopped here, we would make no money from it. A valid test of the hypothesis by the drill bit must prove its validity. There are creative ways to sidestep deep drilling or large acreage position (i.e., expensive) plays.
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Scott A. Wainwright ............................ Constitution/Strategic Plan/Nominating ................. New Orleans
J. Brian Walter ..................................... Directory ................................................................. Dallas
James M. Zotkiewicz .......................... Headquarters/Prof. Enterprise Mgmt ..................... New Orleans

SIPES Vision Statement

To be the pre-eminent organization for furthering the professional and business interests of independent practitioners of the earth sciences. In achieving this vision, emphasis will be placed on (1) professional competence, (2) professional business ethics, and (3) presenting a favorable, credible and effective image of the Society.

Adopted by the SIPES Board of Directors
September 21, 1990

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