Greetings fellow SIPES Members. Now that the bustle of the holidays is over, we can reflect on the past year and the magic of the holidays and joy of spending time with family and friends. When I see the young children sitting on Santa’s lap, believing in his special brand of magic, I just have to smile. My kids, now grown and in their 20’s, still believe in magic too! The magic of the independent geologist. They think that most of my best magic (read work) occurs on the golf course, and oh how I wish this was true!

So how do we, the SIPES Members, create our own brand of magic? How is it we are able to survive and thrive when all we have to sell are our ideas, concepts, and

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The following reports on environmental and state legislative issues were prepared by Environmental Committee Chair Bill Finley, and State Legislative Affairs Chairman Craig Smith. The views and opinions expressed are those of the authors. Some of the information presented is in the public domain and is available from a variety of sources; other references were selected by the authors, and are noted in their reports.

ENVIRONMENTAL REPORT

Environmental Activism

As some of you are aware, I have been working on a presentation for the general public (as well as for those of us in the business) to bring awareness to the back story behind the headlines, and hopefully garner some respect for the contributions we (as an industry) make to the economy, national security, and yes, the environment. I have been somewhat delayed in this process due to other evolving opportunities, but this portion of the Quarterly is providing me an avenue to get back to work on it. The following is my interpretation of a way we can move forward and begin working together to resolve some of the issues. I hope you will participate in this effort by testing and commenting on the ideas so we can improve not only the message, but the practice of doing business in an increasingly fragile environment.

To begin, our industry is built around a rather simple business model: figure out the cheapest way to market a product so we can maximize profit. OK, so it’s not all that different from every other company/industry business model. But why are we seen as the despoilers of the economy and defilers of the environment?

Having worked at this for nearly 2 score years, I’ve seen a lot of opportunities that didn’t work, and frankly I’m often at a loss to understand how anyone manages to actually make any money and get ahead. It’s considerably tougher than most people are led to believe, since all the general public sees is the “obscene” profits Exxon (Big Oil) reports and the rampant destruction (Macondo) we leave in our wake. And to be honest, the numbers are big and the cost to the environment can be significant. But should they be?

Given that the headlines are “engineered” (no disrespect intended, it’s just a word to describe the process) to sell papers (that cheapest way to market for profit thing again), it’s no wonder we can’t get a break. The only ones defending us is us, and we tend to be the only ones listening as well. So what we need is not better press, but better attention to detail.

I come to this conclusion by understanding that the human species is mostly unique in the ability to reason. But it turns out that we use reason for a singular purpose, and it isn’t to find the truth. The tactic of reason is almost always used to win arguments. [Check out The Argumentative Theory at this link, http://www.edge.org/conversation/the-argumentative-theory]. And this translates into accepting all things that agree with our conclusion (or beliefs) and rejecting all things that disagree, even if these things are “reasonably” more logical and potentially more correct. The rejection process occurs in the background, and is seldom discussed or reported in any presentation to convince others of the correctness of our cause. The end result: it is pointless to attempt honest debate on issues since each side is unlikely to even listen to the other’s point of view, much less agree to change their opinions.

Back to the environment then. Few of us will disagree that protecting the environment is important, but few of us seem to be willing to pay the cost necessary to do this. We call them “NIMBYs” and similar acronyms. But everyone wants to see the results and expects the cost to come out of “their” pockets, “their” being the guys with “obscene” profits. So how do we get reason (as the search for truth instead of for winning the argument) to prevail?

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This is going to be doubly difficult because we have to not only unlearn traditional paradigms, but also begin to learn new ways to incentivize the antagonists to cooperate for the common good. The real difficulty will lie in figuring out how to get all of us to see the "reason" to change instead of defending the status quo. All of us being the three (3) groups that have the greatest effect on the process: Industry, Environmentalists, and Regulatory Governance. (Dawn of the Anthopocene).

Let's look at each of these entities and see what we can do to incentivize them.

**Industry**

- **Reduce the incidence of litigation**
  Stipulate up front that all cases will have a winner and a loser, with the loser paying all the costs of the winner. This would eliminate frivolous cases if the plaintiff has as much at risk as the defendant, and get us back to innocent until proven guilty without bankrupting the innocent in the process. Many cases are settled without acknowledgment of blame, because ending the proceeding is cheaper than continuing, even when you have done nothing wrong.

- **Limit the liability**
  Establish a standardized schedule of real costs instead of emotional extravagances to make the economics of legal actions definable and manageable as a cost of doing business. This removes some of the volatility to profit for the business owner and to the cost for the consumer.

- **Event and Company specific regulation**
  Instead of uniform (one-size-fits-all) regulatory legislation requiring compliance from all participants regardless of individual involvement, if the regulations are designed to deter "crooks," then make the crooks pay the cost, not the honest businessman.

- **Eliminate duplication across regulatory agencies**
  At the risk of adding another government agency, a possible solution would be to have a central authority with oversight on all agencies, local, state, and federal, to ensure that the regulations are not duplicitious, are relevant to regional conditions, and are applied fairly to the practitioners. With fair and cost-effective treatment, we would again be able to budget and plan for building a profitable business that remains affordable to the consumer.

- **Keep Business Profitable**
  Reducing the above costs is only half of the equation. We also need to include the costs of those things we think are important so we can determine a necessary price for profitability. Environmentalism issues currently eat into that profit without just compensation.

**Environmentalists**

- **The environment is worth saving**
  Protecting the environment is everyone’s responsibility, which means all of us (including the consumer) must be willing to pay the cost associated with that protection.

- **Eliminate confrontational interaction**
  Let industry take the lead and partner with environmentalists to identify important issues. By defining and including each issue’s associated costs in project planning, then profitability can be determined, and funding becomes available to complete environmental remediation programs.

  I suspect there are other things that we can include, but I don’t have a handle on these yet. We need to find some though because the environmentalists I know have only dealt with antagonistic members of our industry and will need more convincing.

**Regulators**

- **Give Regulators True Oversight**
  Current regulation is a moving target that shotguns the participants causing collateral injury to innocents in a one size fits all world. Instead of just making rules, allow regulators real authority to actively pursue and prosecute "crooks," with the additional authority to levy severe consequences to the perpetrators.

- **Forgive Accidents and Self Reporting**
  When accidents happen and are promptly reported to the regulatory agency, then all fines are forgiven, freeing the regulator’s time for more productive activities. Cleanup is still a cost of doing business, but the insult to injury is eliminated. Then if similar problems persist over time, True Oversight (above) can be activated.

- **Establish Stabilized Market Pricing**
  Set a stabilized price that includes all costs for business (product, manufacturing, marketing, research, and profit etc.), environment and government (regulatory and taxes etc.) activities. As real costs fluctuate within the set price, tax rates adjust to maintain the set price. Fat years will build a tax surplus to level out the lean times. A single set retail price eliminates price fluctuation thus stabilizing the domestic market and the economy and preventing speculation.

  We need to set an example like this for the rest of the world. By stabilizing energy prices that ensures project profitability, while also ensuring protecting the environment, we can maintain a cost that is affordable to the consumer. This could bring industry back to this country and show the world market that business can function in a way consistent with productivity that is in step with environmental conservatism.

  The environmentalist could then move on to other important issues like saving the whales, etc.
**STATE LEGISLATIVE NEWS**

**TEXAS**

This 2014 1st quarter’s state legislative issues report is somewhat abbreviated due to the Texas legislature being out of session for 2014. However, important new amendments to Statewide Rule 13 were adopted by the Texas Railroad Commission in 2013 and came into effect on January 1, 2014. Statewide Rule 13 governs oil and gas well requirements related to casing, cementing, drilling, well control and completions.

Many of the changes adopted addressed environmental and public safety concerns arising from the ongoing boom associated with the Texas shale plays in the Eagle Ford and in the Permian Basin. The actions also reflect the state’s commitment to regulate its own industry in order to preempt any attempts by federal regulators to do so.

The following excerpts from a May 2013 news release by the Texas Railroad Commission describe the changes:

“The new amendments to the Commission’s Statewide Rule 13 (Casing, Cementing, Drilling, Well Control and Completion Requirements) include:

- Updates and more clearly outlined well construction requirements, including:
  - For wells undergoing hydraulic fracturing treatments, operators are required to pressure test well casings (steel pipes that make up a well) to the maximum pressure expected during the fracture treatment and to notify the Commission of a failed test. Also during hydraulic fracturing, operators are required to monitor the annular space between the well’s casings for pressure changes (which could indicate a leak in casing) and suspend hydraulic fracturing operations if the annuli monitoring indicates a potential down hole casing leak;
  - Requires operators to verify the mechanical integrity of surface casing and intermediate casing for wells in which the drilling time for the next casing string (either the intermediate casing string or the production casing string) exceed 360 hours. This will ensure that the drilling (the rotation motion of the drill string) inside the surface casing did not damage surface casing integrity or other intermediate casing strings;
  - Requires operators to isolate (place cement behind casing) across and above all formations that have a permit for drilling through the casing to a depth greater than 3,500 feet; and
  - Requires Commission approval before setting surface casing to a depth greater than 3,500 feet;

- Establishes additional testing and monitoring requirements for “minimum separation wells” where the vertical distance between the base of usable quality water and the top of a formation to undergo hydraulic fracturing treatment is less than 1,000 vertical feet. This provision involves a limited number of vertical wells that are vertically hydraulically fractured in a handful of shallow fields, which are found in the Abilene, Midland, San Antonio and Wichita Falls areas and does not involve horizontally completed and hydraulically fractured wells in the major plays in the Barnett Shale, Eagle Ford Shale and Permian Basin;

- Requires operators to use air, fresh water or fresh water-based drilling mud until surface casing is set and cemented in a well to protect usable quality groundwater;

- Operators are required to pump sufficient cement to isolate and control annular gas migration and isolate potential flow zones and zones with corrosive formation fluids;

- Updates references to cement quality, cementing, well equipment, well casing centralizers and well control, and sets minimum cement sheath thickness of at least 0.75 inches around the surface casing (steel pipe) and a minimum cement sheath thickness of 0.50 inches around subsequent casing strings; and

- Consolidates and updates requirements for well control and blowout preventers, and distinguishes between the use of well control equipment on inland, bay and offshore wells. Main rule amendments involve the makeup of blowout prevention systems.

- Implements Article 2 of House Bill 2694 to reflect the transfer of the Texas Commission on Environmental Quality’s Surface Casing Section to the Railroad Commission, where it is now called the Groundwater Advisory Unit. As usable quality groundwater depth varies statewide, this unit establishes the depth of surface casing required for each well to protect groundwater.”

**WYOMING**

(Source: News release Wyofile.com, Dustin Bleizeffer, February 4, 2014)

Two interesting developments came to light in Wyoming, one legislative issue and one pending judicial case.

The first is a legislative proposal to modify the severance tax rates on coal and oil and gas in the state. HB 66 would decrease the severance tax rate on coal extracted in the state and increase rates on oil and gas produced in Wyoming. Significantly, other portions of the bill would for the first time subject flared gas to a severance tax assessment.

The bill is sponsored by Rep. Eric Barlow (R-Gillette) and Sen. Ogden Driskill (R-Devils Tower).

Current severance rates for coal are 7 percent for surface mined coal and 3.75 percent for underground mining. The rate for Wyoming oil and gas is 6 percent. The author’s intent is to stimulate the states flagging coal industry, hard hit by federal anti-coal regulation. Wyoming coal generated over $1.22 billion in state and local taxes in 2012, but a federal coal lease sale in the Powder River Basin last summer 2013 received no bids. Concern over keeping this critical revenue source healthy is high especially so with almost 7,000 statewide jobs associated with coal mining according to the Wyoming Mining Association.

Shifting the revenue enhancement burden to oil and gas is not without opposition. Particularly significant in HB 66 is a provision to eliminate the tax exemption on flared or vented natural gas.

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According to the wyofile.com article by Mr. Bleizeffer:

“Currently, no severance taxes are applied to natural gas that is vented or flared, nor to natural gas volumes consumed in the production process prior to point of sale. The bill would apply a 1.5 percent severance tax rate to both categories, yielding an estimated $4 million annually, according to the Legislative Service Office. Applying the severance tax to natural gas volumes consumed on the lease site would make up $3.9 million of the total $4 million revenue increase.”

The president of the Wyoming Petroleum Association, Bruce Hinchey, has indicated that the WPA will oppose the provisions of HB 66 that seeks to tax vented, flared, and process-consumed gas.

The judicial case was brought to my attention by SIPES former president, Jack Naumann. It involves historical right of ways issued by the federal government to railroads and the question of where ownership reverts when the railroad is no longer in existence. There are obvious implications here for the oil and gas industry as well.

The following was excerpted from a report by attorney William P. Pendley of the Mountain States Legal Foundation who argued the case before the U.S. Supreme Court on behalf of their Wyoming client, Marvin Brandt.

“...in 1875, Congress passed the General Railroad Right of Way Act of 1875, which provided for conveying easements to railroads to lay railroad track to permit the settlement of the West by private citizens. It was clear at that time that the right granted to the railroads was an easement and NOT a partial fee with a right of reversion to the federal government of the right of way after the railroad ended its use of the easement. In fact, from the time the U.S. Department of the Interior (DOI) first adopted regulations regarding the act in the 1800s until today, that is, as recently as November 2011 (the date of the most recent Solicitor’s Opinion on the issue), the DOI has treated the right of way as an easement when conveying land to settlers. In 1942, the Supreme Court was presented with the question of whether the right of way was an easement or a partial fee in which the federal government retained an interest. The Solicitor General (SG) spent almost the entire brief arguing that it was an easement. The Supreme Court adopted that argument almost verbatim and rejected other arguments by the SG that were inconsistent with the holding that the right of way was an easement. Meanwhile, Congress made no changes in the 1875 act in response to either the actions of the DOI or the ruling of the Supreme Court.

As a result, everyone in the country—lawyers, landmen, and title insurance providers—recognized that if the federal government conveys to a private party lands encumbered with an 1875 railroad right of way, when the railroad abandons its use of the right of way, the former easement is absorbed into the title owned by the private landowner. That is, the land is no longer encumbered by the easement and is owned outright and totally by the landowner and NOT the federal government. The patent received by our client, Marvin Brandt of Fox Park, Wyoming, provides that his land is encumbered by the railroad right of way and that the federal government retains no interest in the property. Now the federal government, after 140 years of arguing otherwise, asserts that when it conveyed the right of way to the railroad it was NOT an easement, but a partial fee in which the federal government retained the right of reversion, that is, it could get it back. This partial fee with right of reversion that the federal government argues exists and has existed since 1875 is unknown to the common law and property law in this country. In fact, the concept is not just alien to the common law, it is a sleeping Frankenstein monster created by the federal government and its allies in States, municipalities, and land-grab groups that, if allowed to awaken as a result of a Supreme Court ruling against Marvin Brandt, will eject people from their land and even their homes. As several justices pointed out during the argument, the federal government argues that, contrary to all knowledgeable expectation and 140 years of action by Congress, the Court, and the Executive, millions of landowners will be displaced or have their titles to their land rendered in doubt.

A ruling by the court is expected before this coming June.

NEW MEXICO

The issue of the endangered species status of the Lesser Prairie Chicken is the paramount item on the horizon in New Mexico.

The United States Fish and Wildlife Service recently sent letters to state representatives indicating that the decision on whether the lesser prairie chicken will be listed as an endangered species is extended until March 30, 2014. The letters acknowledged the support of both Senator Udall and Representative Pierce for the five-state conservation plan that is being advocated and implemented by the Western Association of Fish and Wildlife Agencies.

Oil and gas industry proposals to implement self-regulatory measures to preserve the habitat and viability of the LPC are being implemented and are designed to hopefully avert the designation of the LPC as an endangered species.

OTHER STATES

Space and time limit the extent of this report. Needless to say many other producing states have implemented new laws and regulations with respect to hydraulic fracturing and horizontal drilling.

Some of these rules and regulations are an attempt by the states to control their own destinies with regards to the development of mineral resources within their boundaries as the threat of onerous federal regulation continues to rise.

If any of our SIPES members or other readers have special insight into their state’s legislative activities, or simply have a good source of information in their state, please contact me and we will try to get their legislative items of interest published here.
The New Orleans Land and Exploration Company (NOLEX) is pleased to announce its association with Talos Energy LLC.

NOLEX will complement Talos' Gulf of Mexico exploratory efforts by exclusively generating prospects onshore South Louisiana and adjacent trends. NOLEX will target a balanced portfolio of oil prospects and high potential gas/condensate plays. The NOLEX team consists of highly experienced generators including Gary Fortier, Rand Turner and Scott Wainwright who will evaluate a high quality seismic data base of over 1,500 square miles. The generating team is led by Co-Owner, Kevin McMichael, former McMoRan consultant and Sr. V.P. Exploration for LL&E, Sonat Exploration and El Paso Oil & Gas.

Co-Owner, Jim Carrington, will be responsible for all legal, land and business development activities and retain a role in Talos as Sr. Business Development Advisor.

Talos Energy is a private company founded in 2012 and led by Tim Duncan with a $600 million private equity commitment. The management team worked together at Gryphon Exploration and Phoenix Exploration, both companies were successful private equity backed start-ups focused on acquisitions and exploration. Talos has over 27,000 sq. miles of seismic data in the GOM and South LA and they operate 90% of their 400,000 gross acres of leasehold in the Gulf of Mexico Shelf, Deepwater and South Louisiana.
price rise (2.4 fold increase) since mid-April, 2012 with a $1.87/MMBTU price nadir. However, Henry Hub is not the only price point.

**Pipelines, Pinch Points and Prices**

This winter, natural gas prices are like real estate; it is “location, location, location.” The Algonquin Citigate Hub that services the pipeline’s limited New England area had a 75% increase in natural gas prices in 2013 to $6.90/MMBTU. Transco Zone 6 Hub was second in the nation with a price increase of 61% to $5.10. The most quoted hub, Henry Hub in LA, averaged $3.73/MMBTU – a 35% increase over 2012. The figure on page 1 from the Energy Information Administration (EIA) depicts the spot prices for major trading hubs. Note the large year over year increases and the wide regional price disparities between trading hubs (i.e., Algonquin Citigate - $6.50 vs. Transco Leidy at $3.17).

The one–two punch of frigid weather combined with limited pipeline capacity in New England yielded high demand for both heat and electricity. Natural gas heats about half the Massachusetts homes. The Boston Globe reported that the high cost of power forced Maine and New Hampshire paper mills to cut operations or temporarily shut down. December’s spikes in local wholesale electrical prices exceeded $1290/Mega-Watt hour (vs. $36/MMWH average for 2012) and were over $737 in early January. About three quarters of the electricity generated in Massachusetts and half of New England’s electricity generation are now by natural gas. Coal to electric generation has dropped from about a quarter to a tenth of the total capacity. New England is blessed by neighbors with abundant natural gas resources from Pennsylvania/West Virginia Marcellus gas fields. However, New England does not currently have the infrastructure (pipelines) to access and deliver the product volumes needed. To the south, the New York/New Jersey area pipeline companies have been addressing their capacity shortfall issues more aggressively. Spectra Energy added about 800 MMCFGD capacity from Marcellus gas to NYC, and an additional 3.5 BCFGD is in the works: 2 BCFGD to be installed this winter and 1.5 BCFGD over the next two years. The seasonal price differential between Algonquin and Transco Hubs in comparison to the Henry Hub prices is telling (see plot below). The additional Transco Zone 6 area capacity has dampened price spikes significantly for NY/NJ, whereas New England’s Algonquin Citigate Hub is expected to be plagued by price spikes until capacity issues can be reasonably resolved.

Are more New England price spikes to come in the future? Three coal plants are operational in MA: Salem Harbor, Brayton Point and Holyoke (Mt. Tom). The Salem Harbor generation station (330 MW) is due to switch to natural gas this year. Brayton Point coal plant (1530 MW) is close in 2017 due to the economics of required emission upgrades. Holyoke will be the remaining coal facility (146 MW) operating in the near future. Without additional pipeline capacity bringing in additional gas, many Cape Wind type offshore Nantucket wind generation projects (170 MW average) will be needed to balance the peak electrical grid demand to replace the previously coal derived electricity.

**Pipelines on Steel Wheels: Transportation by Rail – More Bakken Crude Train Fires**

BNSF Railroad was involved in a December 30, 2013 train collision between a crude oil tanker train (3 locomotives and 106 tankers) and a derailed grain hauling train near Casselton, ND. The grain train derailment resulted in one of the cars trespassing on the crude oil train’s track. The two head end locomotives, 20 tanker cars and one hopper car carrying sand left the track in the 42 MPH collision. At least 18 tankers were punctured releasing over 9,500 barrels of Bakken crude that subsequently caught fire. No deaths or injuries were reported in the incident. About 1,400 residents were voluntarily evacuated for about three days.

This is the third (or fourth?) significant railroad fire event involving crude oil in the U.S. and Canada since last summer. Last July was the Lac-Mégantic, Quebec fire which destroyed the downtown area and resulted in 47 fatalities. Cleanup operations are running about $4 MM/day and are expected to total >$200 MM. These figures do not include rebuilding residences, public buildings or liability charges. The train’s operator carried $25 MM in insurance and has filed for bankruptcy protection. The second/derailment fire incident was near Aliceville, Alabama where 25 out of 90 cars derailed. North Dakota

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crude oil is common in all three incidents. Numerous government entities are now investigating the Bakken crude composition which seems to be more volatile than “normal” crude oil to determine if new regulations are required for transportation. Currently being discussed are additional regulations, more secure railcars, higher insurance and transportation rates, as well as individual cities imposing fees/tariffs on crude bearing rail cars passing through their jurisdictions. A fourth rail fire incident occurred in rural New Brunswick, Canada (1.07.2013) involving five derailed crude oil (unknown source) and four propane cars. Over 120 people were evacuated. No injuries were reported.

“Crude by rail” shipments have been growing exponentially over the last five years from essentially nonexistent, to close to a million barrels per day. Most of the shipments (750 KBOPD) are from the Bakken. To put the crude by rail transport in perspective, the Trans-Alaska Pipeline averaged ~534 KBOPD last year. If ever approved, Keystone XL is supposed to have an 830 KBOPD capacity.

**Pipelines on Paper — Keystone XL Pipeline Update**

**Politics and Prices: Death by Lack of Regulation/Veto Threat – Or is it Really Prices?**

Do you think that fracking is controversial? Try starting a large-scale uranium mining and milling operation in the humid southeast adjacent to a river. Virginia Uranium, Inc., owner of the undeveloped 119+ MM pound uranium deposit, indicated that it’s suspending ongoing efforts to have Virginia’s 32+ year moratorium on uranium mining lifted in the upcoming 2014 General Assembly session. Virginia’s newly elected Governor, Terry McAuliffe (D) previously announced that he would veto any pro-uranium legislation that may pass in the session. The uranium deposits were discovered across the Commonwealth of Virginia in the late ’70s and early ’80s, largely by Marline Uranium Corporation. Coles Hill, located in rural southside Virginia in Pittsylvania County, estimated to hold ~133 MM pounds of uranium, is the largest discovered deposit. This multi-billion dollar deposit is the largest known undeveloped uranium deposit in the USA and one of the largest in the world.

Virginia and the Eastern Seaboard are new to uranium mining and milling; it has never occurred. So in 1982, the Virginia legislature enacted a moratorium on uranium mining for more studies and to set up proper regulatory oversight. During the early stages of the moratorium, uranium prices quickly dropped following the Three Mile Island and Chernobyl accidents to sub-economic levels. Marline lost interest in the project and dropped the leases. Prices stagnated for nearly a quarter of a century until ~2005 when they once again crossed the economic threshold and started their rapid ascent to over $135/pound (non-adjusted $). The two families that owned the site and previously leased to Marline, formed their own uranium company in 2007, secured Canadian funding, and have invested over $50 MM in the project, trying to get the proposed mine project to start digging (Continued)
for the first pound of ore. Since 2007, Uranium prices have been on a down-hill “black diamond” ski slope trajectory, falling over $100/pound to current price of $34.50/pound. Current economic assessments for Virginia Energy Resources indicate that operating costs should average $35/pound. Hence the mine’s current financial outlook is again staring at sub-economic prices. Is Virginia Uranium’s retreat from the moratorium suspension actually due to the Governor’s veto threat or could low prices also be involved? The one-year suspension and scale back of its government affairs program for the 2014 Virginia Legislative session suggests that prices are at least an unstated driver, after all, the Governor is just days into his four-year term. The ultimate outcome is often the same in these types of controversial standoffs. If groups opposed to mining, drilling, building power plants and dams can delay the projects from going forward long enough, the developers will get frustrated and go elsewhere, if possible, or hunker down and begin the long wait for generations to see their project break dirt.

Natural Gas Storage

EIA reports (1.03.2014) state that working gas residing in underground storage is 2817 BCFG, down 157 BCFG from a week earlier and 528 BCFG less than a year ago. Total stocks are down ~16% from last year and are 239 BCFG or >10% less than the 5-year average. See chart for last two year storage history. Current record breaking gas consumption and lower gas in storage may help keep the gas price increase rally continuing for the near future.

Current Commodity Prices

- Oil — WTI - $92.97/bbl, down $10.32/bbl
- Gas — $4.05/MMBTU, up $0.54/MMBTU
- Coal — $64.15/ton for Central Appalachian 12.5KBTU, up $1.00/ton
- Uranium Yellowcake — U3O8 - $34.50/pound, down $0.60/pound

Note: The shaded area indicates the range between the historical minimum and maximum values for the weekly series from 2009 through 2013.

Prices for nuclear fuel are probably headed higher. Stockpiles are decreasing. More U.S. reactors are scheduled to refuel in 2014 than last year. 2013 marked the end of the “MegaTons to MegaWattsTM” program where 500 metric tons of the Russian Federation’s highly enriched nuclear warheads were downblended to low-enrichment fuel for power generation. The concluded twenty-year MegaTons to MegaWattsTM program supplied about a third of the fuel needed for U.S. nuclear reactors. Additionally, Cantor Fitzgerald’s recent research report (01.03.2014) suggests that Uranium has hit its low and is now poised to make positive upward movement. Prices have been dampened by Japan’s lack of reactor fuel over the last three years. Cantor estimates that 12 of Japan’s reactors are set for restart this year and more reactors (556) are planned, under construction, or proposed than before the Fukushima disaster (541).

Large global price differentials still exist in crude oil and natural gas prices. Brent Crude ($107.49) currently has a $16.13 premium to WTI. Recent frigid weather has boosted natural gas prices above the $4 level in many areas. During the “Artic Vortex” cold front of early January, spot prices for natural gas rose above $18/MMBTU and are still above $9 in the New England region.

A rising tide (gas prices) lifts all boats: Natural gas price’s recent steep run up with gas crossing $4/MMBTU range has helped coal producers in many areas. The higher gas prices caused some fuel switching back to coal for electrical generation resulting in coal consumption and production increases in 2013 over 2012.

A final thought on prices – the USA’s comparatively low energy prices, especially for natural gas, result in low electrical rates that continue to bring in new manufacturing investments from abroad. German-based BASF is just one example of a European industrial chemical giant to increase its presence in the U.S. BASF plans on spending over $4B in its U.S. plants by 2017. According to the Wall Street Journal (12.18.13), BASF estimated that if their huge German chemical plant was located in the U.S., they could potentially save $688MM/year in energy costs alone.

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U.S. Rig Count (data from Baker Hughes 01/10/2014) – Activity is dominated by onshore, horizontal oil wells with less than 15K Ft. depths - Total U.S. rotary rig count for oil, gas and geothermal wells stands at 1754, down 2 from the last SIPES Quarterly. Land rigs are 95+% of all activity at 1677. Exploratory activity (60) accounts for 3.4% of all rigs and the count has dropped 12 rigs since last report. Rigs drilling for gas number 351, down 21 since the last Quarterly. Drilling for gas continues its decline with a 17.7% year to year drop. The decline in gas rigs continues to reflect fewer obligations to drill due to contracts or to hold acreage. Additionally, foreign investment dollars for gas drilling have continued to dry up. IHS Herold data indicates that 2013 foreign investment ($3.4B) was only a tenth of what it was in 2011. More robust gas prices should stabilize and increase future gas activity. Oil rig count rose slightly to 1393, over 79% of all current rig activity. The geothermal rig count dropped again to 4, flat from a year ago. Horizontal wells make up about 66% of the drilling activity, vertical wells almost 21% and directional wells stand at ~13% of the total.

Still Bending the Curve: Crude Production – Average daily domestic crude production continues its ascent and now exceeds 8.159 MMBO vs. 7.041 MMBO this time last year, a 16% gain. Imports stand at 6.831 MMBO/day, a drop of 1.156 MMBO/D since last year.

Historical Crude Production for Texas and North Dakota – 1981 through October 2013 – I can never tire of looking at these production turnarounds. See chart above for the dramatic TX/ND turnaround. Let’s hope to see the “hockey stick” curve bending across all producing areas soon.

Way to Go Pennsylvania and West Virginia! – According to EIA, Pennsylvania is the fastest growing gas producing state with a 72% increase in production from 2011 to 2012. West Virginia’s gas production increased by 37% over the same time period. Both Pennsylvania and West Virginia are in the prolific Marcellus gas trend. West Virginia made EIA’s top ten gas producer list for the first time ever in 2012. All this new gas is causing some headaches in the overlapping coal country. Too much gas and not enough internal pipeline capacity has produced a local gas glut resulting in some of the lowest gas prices in the U.S. (note Transco’s Leidy Hub price in the pipeline section). Last October, one of Pennsylvania’s trading hubs averaged $1.83/MMBTU, about half the price of Henry Hub gas. This cheap gas is shutting coal electrical generation plants in the Marcellus trend as they cannot compete with the cheaper gas for electrical generation.

Arkansas Fayetteville Shale Reserve Study by University of Texas Bureau of Economic Geology – UT-BEG has begun releasing its Fayetteville Shale assessment study, the second out of four studies planned. UT’s press release states that “Drawing on production data from all of the individual wells drilled in the Fayetteville Shale from 2005 to 2011, the new assessment estimates technically recoverable gas reserves for the region at 38 tcf, of which 18 tcf will be economically feasible to recover at natural gas prices near $4 per million cubic feet.” The report is published in the Oil and Gas Journal.

(Continued)
What the Future Portends per EIA — The “mystics and statistics”* soothsayers at the EIA have released their Annual Energy Outlook 2014 (early release) with trends and forecasts extending out to 2040. Their annual full release is due out spring 2014. *(apologies to the late Warren Zevon).

Highlights from the report include:

• “Growing domestic production of natural gas and oil continues to reshape the U.S. energy economy, with crude oil approaching the 1970 all-time high of 9.6 million barrels per day
• Light-duty vehicle energy use declines sharply reflecting slowing growth in vehicle miles traveled and accelerated improvement in vehicle efficiency
• With continued growth in shale gas production, natural gas becomes the largest source of U.S. electric power generation, surpassing coal by 2035, and boosting production and natural gas consumption in manufacturing
• Strong growth in domestic natural gas production supports increased exports of both pipeline and liquefied natural gas
• With strong growth in domestic oil and gas production, U.S. dependence on imported fuels falls sharply
• Improved efficiency of energy use and a shift away from carbon-intensive fuels keep U.S. energy-related carbon dioxide emissions below their 2005 level through 2040”

Selected key slides from the report are provided on the next page.

Politics/Government

Dominos Falling and Senator Landrieu Rising at Energy and Natural Resources Committee? – Senator Mary Landrieu (D, LA) is mentioned to be the likely Democratic successor Ron Wyden (D, OR) for the Chairmanship of the Energy and Natural Resources Committee. Wyden is in line for the head of the Finance Committee, assuming that Matt Baucus (D, MT) is confirmed as the new Ambassador to China. Mary Landrieu is up for re-election in 2014 and she knows that the oil and gas industry grease the economy of her state and the USA. She has been for green lighting the Keystone XL pipeline and is favorable towards LNG exports.

Senator Murkowski Calls for End to U.S. Ban on Crude Oil Exports – “U.S. Senator Lisa Murkowski (R-Alaska) today called for the federal government to end the prohibition against exporting crude oil produced in the United States. Murkowski also released a white paper on U.S. energy export policy, A Signal to the World: Renovating the Architecture of U.S. Energy Exports.”

Still Awaiting Federal Nomination: Federal Energy Regulatory Commission (FERC) – In the last Quarterly I reported that President Obama nominee Ronald Binz withdrew his name from consideration to head the FERC after it was clear he could not even muster the required Democratic votes needed for confirmation. All has been quiet from the Executive Office for a new FERC nominee. Jon Wellinghoff has left the Chairmanship in November and Cheryl LaFleur took his place as acting chairwoman. Rumors indicate a less controversial pick, someone already embedded inside FERC. Some sources suggest Norman Bay, FERC’s Director of Enforcement, may be the next candidate for Chairmanship.

Legislative News and Geoscience Policy

Energy

• Senate Finance Committee proposes new reforms to energy tax incentives — The Senate Finance Committee recently released a new proposal to overhaul some energy provisions in the U.S. tax code. The staff discussion draft, introduced by Finance Committee Chairman Senator Max Baucus (D-MT), aims to streamline regulations imposed on energy companies and discontinue a number of key tax credits available to them. The proposal is one of a series of discussion papers prepared by committee staff incorporating ideas from both Republican and Democratic members of the committee and is intended to stimulate discussions on reforming America’s tax code.

There are currently 42 energy tax incentives written into the U.S. tax code. Under the proposed regulations, that number would be significantly reduced. The new regulations make four main proposals. First, the new code would consolidate almost all of the preexisting energy tax credits into two new credits. Next, it would make the timelines for the two new incentives longer, thereby instilling confidence in potential investors and businesses. And finally, the new rules would establish a new, technology-neutral tax credit for domestic production of clean energy and for domestic production of clean transportation fuel.

• CRS report on energy tax credit — The production tax credit (PTC) for renewable energy, a corporate tax credit available to businesses producing renewable energy through a number of green technologies, expired at the end of 2013. The PTC provided a per-kilowatt-hour tax credit to businesses based on the amount of electricity generated through qualified energy resources, such as wind.

Although the tax credit has expired and been reinstated multiple times over the years (most recently in 2009 by the American Recovery and Reinvestment Act), Congress is still divided on whether to reinstate it or not. Therefore, the Congressional Research Service (CRS) was asked to create a report outlining the pros and cons of the production tax credit for renewable energy sources as lawmakers consider whether to reinstate it once more. The report analyzes the spectrum of outcomes: eliminating the tax credit, making it permanent, and various phase-out options for renewal.

• Senate bill to move NOAA to Department of the Interior — Senator Richard Burr (R-NC) introduced a bill this December that will transfer the National Oceanic and Atmospheric (Continued)
Administration (NOAA) from the Department of Commerce to the Department of the Interior. The bill aims to cut spending and reduce duplication by consolidating the Department of Labor and the Department of Commerce into a new agency called the Department of Commerce and the Workforce. The bill is co-sponsored by Senators Dan Coats (R-IN) and James Inhofe (R-OK). The bill has been referred to the Senate Homeland Security and Governmental Affairs Committee.

**Final Musings on Wind Power**

**Another first for Wind Power** — A Duke Energy subsidiary agreed to pay $1MM for killing 14 golden eagles and 149 other protected migratory birds with its wind turbine operations. This is the first time the U.S. Justice Department has targeted wind energy producers. Is solar next? There are reports of 52 birds killed (roasted) last October by the heat from the solar-thermal plant’s mirrors in the Mojave Desert.

**Atlantic Wind Lease Sale #3** — As part of President Obama’s Climate Action Plan, Interior Secretary Sally Jewell and the Bureau of Ocean Energy Management announced (Continued on Page 13)
the proposed Wind Lease sale for offshore Maryland. The lease areas encompass nearly 80K acres and have the potential for generating 850 to 1450 MW, which is estimated to be enough electricity to supply 300,000 homes. Maryland residential service is estimated to increase by $1.50/month once the first electron reaches shore.

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http://ir.eia.gov/ngs/ngs.html?src=Natural-gf7
http://www.eia.gov/petroleum/supply/weekly/pdf/table1.pdf
Figure and data: http://www.eia.gov/todayinenergy/detail.cfm?id=14231
http://www.eia.gov/pressroom/prepresentations/sieminski_12162013.pdf
http://www.energy.senate.gov/public/index.cfm/republican-news?ID=b29a71bd-f0a4-49b7-b7e9-071b44fe8b3
E&E News, Senate Committee on Finance
Congressional Research Service, E&E News

C. Al Taylor, Jr. is an independent consulting petroleum geologist and can be reached at al@nomadgeosciences.com.
Many thanks to the members listed below for their continuing support of our society
2014-2015 Cornerstone Group Members will be printed in the May 2014 Quarterly

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(Continued on Page 15)
New Chapter Meetings and Symposia Calendar Now Available!

Submit your chapter information to the SIPES Office in Dallas at sipes@sipes.org to be included.

LOG ON
Visit the new SIPES Website:
www.sipes.org

► Leadership
► Meetings
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Cornerstone Group Continued

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James W. Fowler — La Veta, CO
Monty J. Gist — Midland, TX
David R. Grogan — Woodbine, MD
Paul E. Habermas — Houston, TX
Henry R. Hamman — Houston, TX
Harold W. Hanke — Oklahoma City, OK
Edward F. Haye — Houston, TX
Donald J. Haynes — Wimberley, TX
Marc H. Helsinger — Sugar Land, TX
Nolan Hirsch — Midland, TX
Bill E. Hogenson — Houston, TX
W. Ralph Holloway — Dallas, TX
William F. Howell — Houston, TX
Michael S. Johnson — Denver, CO
William M. Kazmann — Richardson, TX
John C. Kinard — Denver, CO
H. Lewis Lee — Austin, TX
Eugene J. Lipstate — Lafayette, LA
Robert W. Maxwell, Jr. — Corpus Christi, TX
Michael E. McKenzie — Lafayette, LA
Eric L. Michaelson — Midland, TX
Robert J. Moffatt, Jr. — Shreveport, LA
Craig E. Moore — Houston, TX
William D. Neville — The Woodlands, TX
James F. O’Connell — Amarillo, TX
J. David Overton — Midland, TX
Elwin M. Peacock — Houston, TX
John W. Raine III — Lafayette, LA
Marvin L. Smith — Houston, TX
William M. Smith — Houston, TX
Marion E. Spitzer — Dallas, TX
George W. Todd — Gainesville, TX
Harry P. Trivedi — Oklahoma City, OK
John R. von Netzer — Oklahoma City, OK
Roy C. Walther — New Orleans, LA
Robert W. Waring — Oklahoma City, OK
William G. Watson — Midland, TX
Richard O. Williams — Midland, TX
Ralph O. Wilson II — Evansville, IN
Gerrit Wind — Houston, TX
John D. Wright — Golden, CO

Scout — $50

Audrey W. Adams — Houston, TX
Orville R. Berg — Shreveport, LA
Richard C. Blackwell — Midland, TX
Herbert F. Boles — Midland, TX
Ross E. Brannian — Irving, TX
E. Bernard Brauer — Corpus Christi, TX
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Martin M. Cassidy — Cypress, TX
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Jerry B. Davis — Dallas, TX
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Joseph D. Stewart — Golden, CO
Richard W. Thompson, Jr. — Plano, TX
Bonnie R. Wiese — San Antonio, TX
Richard P. Willkerson — Houston, TX
yes, our dreams? I will tell you how; we do it with fair and trusting relationships with our business associates. These people are more than just our partners at least for me; they are our friends. This is a large part of why we are able to sell our dreams. Even when the prospect is dry, we apologize, commiserate and cry on each others shoulders and then move on. We show up unannounced in a friend’s office and invariably some tidbit of important information is passed, or a new opportunity is revealed. This magic occurs when we physically interact with each other.

Networking opportunities are an important benefit of being a member of SIPES. Whether you are at your local SIPES chapter meeting, the SIPES Annual Meeting, NAPE or AAPG, take the time to talk with someone you don’t know, make a new friend, and maybe a new business opportunity will reveal itself to you. This is the magic of networking which builds personal relationships.

I guess I still believe in magic too! Otherwise I would never have been so blessed to work in this chosen profession of ours and even more blessed to be able to do it as an independent geologist.

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**WELCOME NEW MEMBERS**

In accordance with the SIPES Constitution, By-Laws & Code of Ethics, the following announcement of new members unanimously approved by the SIPES Membership Committee during the last quarter is printed below.

Any member in possession of information which might possibly disqualify an applicant is asked to submit this information to the secretary of the society (George M. Carlstrom) within thirty days of this publication. To be considered, this information should be in writing and bear the writer’s name. If this information is received within thirty days after the publication of the applicant's name, the SIPES Board of Directors must reconsider its previous approval of the applicant. The board's action, after consideration of such new information, shall be final.

*Ralph J. Daigle, National Membership Committee*

<table>
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<th>SIPES No.</th>
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**Welcome New Members**
SAN ANTONIO

The San Antonio Chapter of SIPES had a fall field trip to the Llano Uplift in late September. Our leader was Don McGookey, #1003, and the two-day adventure was amazing for us “rock hounds.” Thank you, Don!!

In October, guest speaker James A. Gibbs, #314, informed us about mezzanine financing, the term used to describe the type of financing that spans the risk spectrum between equity financing at one end and bank loans at the other. It is particularly suitable for providing development funds to independents that may earn a working interest by originating an exploration play, but have limited resources to participate in the field development. Mezzanine financing allows the independent to capture a large part of the value of a successful venture without the need to borrow cash, dip in savings or investments, sell out prematurely, or convert the working interest to an override at a discounted potential value. The talk discussed the types of projects for which mezzanine financing could be considered.

James A. Gibbs is founder and serves as chairman of the board of Five States Energy Company, LLC, and has been both a partner and an officer of Five States since 1985. Jim has been active in the oil and gas industry since 1961. He founded Petroleum Resources, Inc., later selling his interest to his partner. During intervals he served as the exploration manager of the private companies of Petrus Operating Company, Cornell Oil Company, and Lyco Energy Company.

He is a past president and honorary member of the Dallas Geological Society and AAPG, for which he currently serves as a Foundation Trustee. He is a member of the Board of Directors of Dedman College at Southern Methodist University and Trustee of the Institute for the Study of Earth and Man at SMU, the National Petroleum Council, the Explorers Club, and IPAA. He also serves on the Board of the Dallas Museum of Nature and Science.

He has received the Michel T. Halbouty Outstanding Leadership Award from AAPG, the William B. Heroy Distinguished Service Award from AGI, and honorary membership from SIPES.

Jim received his B.S. and M.S. degrees in geology from the University of Oklahoma, where he was awarded OU’s Regents Award in 1996. He is a past chairman of the Alumni Advisory Council of the School of Geology and Geophysics and currently serves on the Board of Visitors of the Mewbourne College of Earth and Energy.

In November, Brian Miller, president of Miller Consulting, Inc. in Austin, spoke on the future compliance issues with the adoption of Statewide Rule 13. This new RRC rule addresses casing, cementing, drilling, well control and completion requirements of wellbores which took effect on January 1, 2014. His talk was an overview of the new changes to oil and gas compliance laws and how it affects the drilling and production of any well.

Brian has a petroleum land management degree from UT and has been practicing before the RRC of Texas since 1975. In 1984 he founded Miller Consulting, Inc. (http://milconinc.com), an oil and gas regulatory consulting firm which, through the years, has represented thousands of oil and gas companies before the RRC in all phases of regulatory matters. Brian is a member of the Texas Alliance of Energy Producers and has been currently appointed chairman of the Railroad Commission of Texas Regulatory Committee.

In lieu of a December meeting, we had a fabulous All Societies Christmas Party with a turnout of over 600 attendees.

Thank you San Antonio for letting me serve as chairman for the past three years. New officers for 2014 are: Chairman Jerry Witte; Vice Chairman Bill Bennett; Secretary TBA; and Treasurer Tim McGovern.

John Patterson
2013 Chairman
CORPUS CHRISTI
Marita Noon, director of the Citizen’s Alliance for Responsible Energy (CARE) and Energy Makes America Great organizations was our speaker for October. Marita, who spoke at the 2013 SIPES Convention in Santa Fe, explained the history, focus, and efforts of CARE and the outreach arm of Energy Makes America Great.

According to Ms. Noon, U.S. dependency on imported oil is essentially the same as it was when the OPEC oil embargo occurred in 1973. From 1973 to 2008 these imports consistently increased. However, since 2008, imports have declined to the level they were in 1973. This decline is due to increased domestic production from the development of the U.S. resource plays.

The “Big Green” groups who oppose any development have redefined the term “fracing” to mean the entire exploration process. Spelling frac[k]ing with a ‘k’ makes it sound ugly. Frac[k]ing means water contamination, [and earthquakes.] Frac[k]ing reduces the need to develop renewables such as wind and solar.

DALLAS
The Dallas Chapter hosted the October meeting talk at the Petroleum Club with our very own Dick Boyce, #3245, speaking on the Mid-Continent Mississippian Lime “The Most Complex Simple Resource Play,” Dick shared his first-hand knowledge of the gas-prone Hugoton Embayment reservoirs, and the more oil prone Anadarko Shelf and Sedgwick Basin accumulations in the Mississipian. Dick emphasized that the play is actually a very complex carbonate system with important facies changes and significant trapping mechanisms. Horizontal drilling and unconventional completion techniques have tipped the scale toward more lucrative returns. Apparently, handling large volumes of produced water figures prominently in the economics of Mississippian Lime production.

Our 2013 Symposium was jointly hosted by the SIPES Dallas Chapter and the Dallas Geological Society at Brookhaven College Geotechnology Institute (BCGI) on November 5.

Titled “An Unconventional Smorgasbord,” the symposium featured AAPG President Lee Krystinik as the keynote speaker. Pioneer Natural Resources provided speakers on “Identifying Phanerozoic Source Kitchens, Eagle Ford Performance Drivers, and Lower Barnett Challenges.” UT Bureau of Economic Geology scientists spoke on “Unconventional Resource Evaluation.” Halliburton addressed “Shale Completions;” Schlumberger discussed “Eagle Ford Core/Log Integration” and additional presentations were made on “European Shale Plays, Southern Delaware Basin Wolfbone and Appalachian Basin Shales.” It was a good day of excellent geology.

Our much anticipated holiday party was Saturday, December 7 — Pearl Harbor Day. We were in the midst of an arctic blast that parlayed North Texas. Our intrepid members were not to be deterred. It was a fun evening and those of us who were able to get there had a great time. We felt like we had earned it!

an abundance mentality, which isn’t helpful to the “Big Green” groups that want to stop development. So, by attacking frac[k]ing, these groups can sabotage the abundance mentality.

Ms. Noon was an engaging and enlightening speaker. It was a pleasure to have her in October.

Due to the timing of Thanksgiving, there was not a November meeting and our annual Christmas party was held in lieu of the December meeting.

The new chapter officers for 2014 are: Brian Calhoun, chairman; Eldon West, vice chairman; Dawn Bissell, secretary; Keith Baker, treasurer; and David Desenberg, past treasurer. Ed Riddle will continue as our SIPES National Director.

We would like to acknowledge Pete Graham who served as our treasurer this past year. Also, a huge thank you and much appreciation to Linda Phelps, who keeps our chapter in perfect operating order.

Dawn Bissell
Secretary
MIDLAND

On Wednesday, October 16, John Polasek presented his talk on “Horizontal Applications in Permian Resource plays: The Devil is in the Details” for our noon luncheon program. John Polasek received his bachelor’s degree in geology from Syracuse University, and his master’s degree in geological sciences from the State University of New York at Binghamton. He started working the Permian Basin in 1978 with the Amoco Production Company and continued his efforts in the Basin with Wintershall and Grace Oil. In 1991, after Apache’s acquisition of Amoco’s Permian properties, John joined them in Houston as the exploration manager for both southern and western regions. In 2002, he became both development and exploration general manager for Khalda Petroleum, Apache’s largest and most active international JV located in Cairo, Egypt. In 2007 he was promoted to exploration manager, chief geologist and manager of the Exploration/Development Group for Apache Canada. Since 2010, when Apache opened their Midland office, John has been the exploration manager and manager of new ventures for the Permian where they are currently the most active driller in the Basin with forty-five rigs running.

With the current industry focus on oil in Permian resource plays, horizontal application and frac technology has become an increasingly important part of our business. With large capital budgets required for leasing, drilling, completing and developing these plays, an up-front understanding of the rocks is essential for a commercial venture. Several examples from “rock to hydrocarbons” were reviewed for resource plays in the Permian including the Cline, Wolfcamp and Bone Spring formations. Our sponsor for this month’s meeting was Randall Anderson.

On Wednesday, November 20, Richard Chamberlin presented our noon luncheon program “Magmatic and Structural Evolution of the Rio Grande rift in central New Mexico: Supervolcanoes, radiating basaltic dikes and domino-style extension.” Richard is an emeritus senior field geologist at the New Mexico Bureau of Geology and Mineral Resources in Socorro, New Mexico. He holds B.S. and M.S. geology degrees from New Mexico Tech and a Ph.D. in geology from Colorado School of Mines. Since “retirement” in 2010, he continues to work part-time at the Bureau on geologic maps and reports. Most of his twenty-six mapping projects have been done in the volcanic terrain of central and west central New Mexico, where crustal blocks have been slowly sliding apart during the last 33 million years to form the Rio Grande rift. Richard’s primary research interest is in the structural control of magma ascent and evolution of volcanoes, including the 32.5 Ma supervolcano at Socorro (Socorro caldera).

Early rifting in central New Mexico (33-24 Ma) began in a back-arc setting as five overlapping rhyolitic calderas migrated southwest along the Laramide Morenci lineament to form the Socorro-Magdalena caldera cluster (SMCC). Ignimbrite sheets from the SMCC buried the tops of west-tilting (domino-style) high-angle fault blocks where accommodation space was filled by wedge-shaped prisms of basaltic lavas erupted along the southeast margin of the Colorado Plateau (CP). Long basaltic dikes (“magma fracing”) that propagated laterally 100 km into CP and Great Plains are coeval with the 29.1 Ma Sawmill Canyon caldera of the SMCC. Plate-boundary rifting (18-0 Ma) and associated volcanism migrated eastward to form wider domino blocks with accommodation space filled by volcanic-rich gravels, sands and mud. The ancestral Rio Grande linked Miocene closed basins at about 5 Ma. Competing hypotheses for deep-seated driving forces of rifting were discussed. Our sponsor for the month of November was Bill Burkett.

The Midland Chapter does not meet in December.

David Farmer
Chairman
HOUSTON

The SIPES Houston Chapter’s October luncheon meeting was held at the Petroleum Club on October 17 with 77 in attendance. The speaker was Don Clark, professor of petroleum geology at the University of Southern California. He is also a practicing geological consultant. His talk was titled: “Hydraulic Fracturing and Earthquakes: How do we move forward and do the right thing?” He is this year’s AAPG Distinguished Lecturer on the topic of ethics. Chair-Elect Jory Pacht planned a successful camping trip for the chapter to Inks Lake State Park in central Texas. Seven members and guests participated during the weekend of October 18-20. The fall weather was glorious that weekend, and the group visited Longhorn Caverns and spent time canoeing, kayaking, hiking, enjoying the scenic lake, and of course talking geology.

Continuing Education Chair Robert Pledger planned a very successful one-day seminar held on November 1. It was entitled “Optimizing Returns and Risk Reduction through Financial Structures and Geotechnical Tools.” It featured eight speakers on the topic and took place at the Marathon Oil Conference Center in Houston.

Robert’s goal was for the program to feature information that is as practical and useable as possible for the working geoscientist, and that goal was realized. The course was well-attended and the notes provided are a valuable future reference, and are available through the Houston SIPES Chapter.

The Houston Chapter’s Annual Fall Social “Vegas Night” was held Thursday evening, November 7 at the Petroleum Club. The purpose of the evening was to have a good time with friends and colleagues at dinner and the gambling tables while raising money for chapter activities. It was a successful function.

The November luncheon talk, “Oil and Gas Value Chain Economics in the Unconventional World” was held at the Petroleum Club and delivered by Gurcan Gulen, senior energy economist at the Bureau of Economic Geology (BEG) Center for Energy Economics, located on Allen Parkway in Houston. Dr. Gulen emphasized that shale gas is responsible for an enormous increase in domestic resources. The challenge today is to understand the economic impact of each shale play and determine the size and value of the resource as influenced by various price environments and other economic variables.

Our December 19 luncheon talk, “Attribute Analysis Using Neural Networks” was held at the Petroleum Club and delivered by Deborah Sacrey, #1271, of Auburn Energy. She emphasized that effective attribute analysis can aid in finding oil and gas as it can mitigate risk, improve seismic interpretation and enable better reservoir characterization. Deborah gave this presentation at the 2013 Convention in Santa Fe; it is available on DVD from the SIPES Foundation’s Earth Science Film Library.

Denise Stone
Secretary
OKLAHOMA CITY
The October meeting of the SIPES Oklahoma City Chapter was held at the Petroleum Club. After a good meal, we settled in to hear an excellent presentation from our speaker, Jim Puckette from the Boone Pickens School of Geology at Oklahoma State University. His presentation was titled: “Burbank Field: An Example of Using Vintage Data to Improve the Geologic Model and Enhance Modern Success.” This talk was of great interest to our members and was well received.

Our chapter met for lunch on November 6 at the Petroleum Club. Lee Krystinik, president of AAPG, presented his talk on the Mississippi Chat play in Northern Oklahoma. His techniques involved differentiating bedded vs. alluvial chat conglomerate deposition using image logs and high-resolution 3D seismic. His observations were thought-provoking and prompted several questions and observations from the audience.

In lieu of our normal monthly luncheon meeting, December brought us to the Petroleum Club on December 12 for a Christmas Party. Members enjoyed a wonderful evening of sharing with friends and colleagues, feasting on a bountiful buffet, sampling from the open bar, and listening to live music. A few brave souls created a great festive atmosphere by impromptu dancing. A great time was had by all and we look forward to next year’s event being even bigger and better.

Jim Franks
Chairman

SIPES National Dues Waivers
Eligible SIPES Members choosing to waive their National Dues must notify the Dallas office each year at (214) 363-1780 or at sipes@sipes.org to verify their contact information.

In order to waive dues, members must have 20 years of continuous membership and be 80 years old on or before March 1, 2014.
FORT WORTH
The October meeting of the Fort Worth SIPES chapter was held at the Petroleum Club of Fort Worth with thirty members and guests attending. Julie H. Wilson, former vice president, corporate development, Barnett Shale, for Chesapeake Energy, spoke about the “Impact of Urban Drilling on the Oil and Gas Industry.”

Ms. Wilson detailed the unique growth of the Barnett Shale development in the Fort Worth and surrounding area and its attendant power, water use, road hazard and even noise issues. She suggested the average person takes power for granted and even those with knowledge may adopt a not in my backyard (NIMBY) attitude toward development. She suggested the most powerful demographic group to engage and educate is the 30- to 40-year-old female demographic who have children in school and vote. This can be done one on one or by small presentations in schools and organizations by scientists and engineers who also have the same concerns.

Our November meeting had forty-three members and guests attending. Mahmoud Asadi and Brandon Klingensmith of FTS International presented a talk entitled “Shale Revolution: Millions of Years in the Making.”

Dr. Asadi detailed the history of the company from it’s inception in 2002 in Fort Worth during the early days of the Barnett Shale play. The founders saw a niche develop in the well stimulation business and the company growth has been steady upward since. FTS is now in the top five service providers in most of the active shale basins and remains headquartered in Fort Worth. Dr. Asadi contrasted the difference in shale conductivity versus connectivity and how their lab continues to be an industry leader in unlocking new techniques for enhanced production.

Mr. Klingensmith then discussed the location and current status of the various shale plays where FTS is active. He particularly focused in on the Marcellus as the current gas leader and the Eagle Ford as the current liquids leader.

The Fort Worth Chapter did not meet in December.

John Tittl
Secretary
NEW ORLEANS

The October luncheon was held at Andrea’s Restaurant in Metairie and featured Gifford Briggs, director of the Political Action Committee of the Louisiana Oil and Gas Association (LOGA). Briggs opened by noting that Louisiana has an extremely bad legal climate for industry. In terms of lawsuits Louisiana ranks 49th in the nation, ahead of only West Virginia. The issues include royalty suits and legacy lawsuits and are made far worse by a court system that favors plaintiffs and is driven by a handful of legal firms that are actively extorting the oil industry. The business climate in South Louisiana has declined to the point where an average of only 12 drilling rigs are running, a number that is far lower than what was seen in the oil price crash in the 1980s.

Briggs provided details on the current lawsuit by the “Flood Protection Authority-East” (a levee board) against 97 oil, gas and pipeline companies that would require them to pay for damages to the state’s coast. (See November 2013 SIPES Quarterly Environmental Report for more information on this organization and lawsuit.) Although many of the companies that drilled wells in South Louisiana are no longer in existence, their successor companies or anyone operating a well in the marsh land will likely be sued for damages. All of the wells were drilled in compliance with the regulations in force at the time they were drilled. Many were drilled when remediation was required by the state in areas that the state recommended for remediation. Many of these areas were not in the actual well site location. LOGA is actively working to challenge the legality of the suit. The positions of Governor Jindal and Attorney General Buddy Caldwell regarding the lawsuit are unclear and have varied dramatically since it was filed. As a result of the lawsuit, companies wanting to drill in South Louisiana are unable to secure insurance and financing. Among the other negative impacts of the lawsuit and drop in drilling, LOGA’s Expo has been cancelled. If the lawsuit is successful (or if even one company settles) every school board and parish council will be required to file their own lawsuits in accordance with their fiduciary responsibilities. Additional information and updates are available at the LOGA websites, http://loga.la and http://loga.la/resources/southeast-flood-protection-authority-lawsuit.

For the November meeting, the New Orleans Chapter participated in the API Delta Chapter Joint Industry Luncheon at the New Orleans Roosevelt Hotel with twenty-three other energy-related societies. The keynote speaker was the Oil & Gas Journal’s award-winning editor Bob Tippee. Tippee spoke on the extremism that is impacting the energy industry, both in the U.S. and abroad. This is exemplified by the push for increasing the use of renewables over fossil fuels, even as renewables make no sense economically. Europe is the leader in the use of renewables and some European countries are subsidizing renewables with significant costs. One result of this is that Germany is losing manufacturing capacity due to the high costs of renewables. This is a growing problem.

The current administration strongly favors renewables at the expense of oil and gas, and this is reflected in a broad range of policies and erected barriers. Examples include permitting delays, leasing slowdowns, tax preferences, obstructions to fracking, and opposition to the Keystone Pipeline.

The December luncheon was our annual “Open Mike” meeting where members were encouraged to share whatever was on their minds. Prior to that portion of the meeting there were several announcements. Members were given a progress report on plans for the SIPES National Convention that will be held in New Orleans on June 9-12, 2014. The technical program for the convention is nearly finalized but additional sponsors are needed. The petroleum geology course at the University of New Orleans has wrapped up and proved to be a great success. The course was funded in part by the New Orleans SIPES Chapter, with additional funds provided by members along with the New Orleans Geological Society. Vice Chairman Charles Corona has lined up an excellent set of speakers through 2014 and the members were very appreciative of his efforts and results on behalf of the chapter.

Members were advised that the Louisiana Oil and Gas Association (LOGA) has filed suit against the Louisiana Attorney General James “Buddy” Caldwell for allowing a New Orleans area flood board to pursue a massive lawsuit against oil, energy and pipeline companies who are accused of damaging the state’s coast. The suit claims that Caldwell’s approval of a contingency fee contract between the Southeast Louisiana Flood Protection Authority-East (SLFPA-E) and attorneys representing the board in a lawsuit against 97 oil and energy companies over coastal erosion is unconstitutional and a violation of law. Members noted that the lawsuit has already had a negative impact on those seeking funding for prospects in Louisiana.

The “Open Mike” portion of the meeting featured a wide range of jokes (and one new song) although none are suitable for publication.

Art Johnson
Secretary
DENVER

The Denver Chapter gathered for lunch in October at the Wynkoop Brewery. Bill Goff, #2068, and Emily Hundley-Goff enlightened those gathered with their presentation, “Reviewing the Mississippian Lime Play of Kansas – Does Unconventional Exploitation Thinking Have a Place in Oz?” Bill and Emily operate their own company, Cholla Production LLC, in Littleton, Colorado.

October speakers Bill and Emily Goff.

In the latter part of the first decade of the 21st century, one of the most disruptive leasing plays in quite some time took place in the mature producing state of Kansas. The play was the “Mississippian Lime.” (See Dallas Chapter news story on page 17). The allure and publicity of a new “resource” play that could possibly exceed the reserves of the Bakken Shale play of North Dakota convinced super-sized independents and even a major oil company to acquire large landholdings over the western two thirds of the traditionally independent-dominated state. Many long-time Kansas operators worried that they would have no chance to continue operations, and, in fact, might be conducting going out of business sales. As the evaluation progressed, most of the super independents and the major have either exited or have their properties on the auction block. The Bakken’s status as the “hot resource play” is safe and secure, and most of the independents are back at work leasing and drilling.

The authors reviewed the play in Kansas, offered their thoughts on the geology and engineering concepts that were used, or in some cases ignored, and gave their opinions on the successes and failures that occurred. A great deal of capital was deployed in the play in an unsuccessful attempt to make the oil-rich Mississippian formations fit the mold of “resource plays.” In the authors’ opinion, however, much valuable information applying unconventional thinking to exploitation of oil and gas reserves in a mature province was gained from the surge in exploration involving the “Miss.”

November found us gathered again at the Wynkoop for a talk by Graham A. McClave. Graham is the operations geologist for Endeavour International Corporation in Denver. He holds a B.A. in geology from University of Colorado-Boulder, and a M.Sc. in geology from Colorado School of Mines. At Mines he conducted research on the Heath Formation in central Montana. His presentation was entitled “Heath Formation of Central Montana: A Viable Tight Oil Resource Play?”

The Mississippian Heath Formation has long been recognized as the key source rock interval for the Heath-Tyler-Amsden (!) petroleum system located in the Big Snowy trough of central Montana which has produced more than 100 million bbl of oil to date from conventional traps. The Heath is the uppermost member of a Mississippian aged regressive-transgressive sequence referred to as the Big Snowy Group, and is unconformably overlain by the Pennsylvanian Amsden Group.

The Heath Formation itself varies regionally from 150-450 feet thick, at a present depth of burial of 3,000-6,000 feet within the deeper portions of the trough. It is composed of a mixture of marine lithologies including mostly black micritic shale interbedded with thin fossiliferous limestone and dolomite stringers, and minor gyspum and anhydrite occurrences. The most organic-rich zone of the Heath, informally referred to as the Cox Ranch Shale unit, ranges from 5-25 feet in thickness, and is composed of finely laminated micritic black-brown shale. This highly organic zone occurs adjacent to the Heath B carbonate unit, composed of interbedded limestone, dolomite and shale. The limestone and dolomite beds are thin (2-5 feet thick), but generally become thicker and better developed toward the southern region of the study area.

Programmed pyrolysis data for the Heath shales indicate very good source rock character. Within the Cox Ranch unit, the organic carbon content (%TOC) ranges from 0.5-26% and averages around 9% with 52 peak values averaging 20 mg HC/g rock. Kerogen type analyses (modified Van Krevelen plots) point mainly to algal sourced Type II/Type II-S kerogen, while Tmax suggests oil window maturity with values ranging from 420 to 449 deg C. Maps of the geochemical parameters indicate a primary region of oil maturity in the south-central study area adjacent to Sumatra Field.

Other data sets also point to oil generation within the Heath. Fischer assay analysis done by the Montana Bureau of Mines and Geology in the 1980s calculated a weighted average of 10.4 gal/ton oil yield for the Cox Ranch shale beds in very shallow subsurface occurrences adjacent to where the unit outcrops in the Big Snowy Mountains. In addition, burial history

(Continued)
and thermal maturity modeling from wells drilled in the deeper portion of the trough show evident oil window expulsion from the Heath with the critical moment occurring in the Early Tertiary during a period that represented the point of greatest subsidience for central Montana strata, and occurred just before the onset of Laramide deformation.

Oil generation from the Heath shales is clearly evident. However, the Heath’s potential as a tight oil resource play is contingent upon the ability to develop effective permeability within the thin limestone/dolomite interbeds. It is hoped that fracture stimulation will accomplish this.

Well-logs indicate these carrier beds are fairly tight with porosity unit values (DPHI) ranging from 3-7% (limestone matrix), and locally in excess of 13%. Recent horizontal wells completed in the Heath B carbonate unit have tested at 30-day IP rates up to 250 BOPD. If economic well recoveries can be established, the upside to this play is strong with various estimates of recoverable resources ranging from 500 million to 4 billion barrels of oil.

Our Denver Chapter 2013 activities came to a close with our December Holiday Party on December 4th at the Briarwood Inn in Golden. Conversation over appetizers and drinks was followed by a sumptuous meal. The 2013 executive committee members: George Carlstrom, national director; Ron Lloyd, secretary; Jim Mullarkey, vice chairman; Mike Brondos, treasurer, were thanked for their service by our Chapter Chairman, Tom Stander, with a memento of the occasion. Jerry Hodgden was lauded for his work on sponsors for SIPES events, as well as numerous others who helped out during the year.

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2013 Secretary
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(Continued on Page 27)
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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
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