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FROM THE PRESIDENT

Tennessee's oil and gas industry in 2010 was like that of many other states, we had our ups and downs. As a consulting geologist in Tennessee for more than 30 years, I can honestly say the last two have been among the most challenging.

Most of my clients are small, local operators or out-of-state companies that also operate in Tennessee. They all sing the same song, "Capital is hard to raise and good prospects are hard to acquire."

My answer to the former is that we have survived the financial turmoil of the past two years, the drop in natural gas prices, and the always-present regulatory and environmental issues that confront us. The economy will improve and capital will again be available. My answer to prospecting is to take advantage of the situations that are presented to us. Hard times often free leases. Companies that normally might not sell farm-outs or take in partners on their best prospects, may do so now.

I urge clients that have funds to drill with and a little discretion on where they can spend them to think outside the box. Drill somewhere new, take a flyer on a wildcat occasionally, and test new zones in old fields. If we keep drilling in the same

places, we eventually run out of viable prospects.

Drilling Outlook

Over the past few years in Tennessee, we have seen a rush to acquire leases on the Cumberland Plateau, where companies target the gas potential of the Chattanooga Shale. At first the wells were mainly traditional vertical wells, which proved OK, but not spectacular. These wells last for a long time, but take a while to pay out.

Then, horizontal drilling came into vogue and companies saw much better production volumes. This led to a high rate of drilling, with almost all of it on the northern portion of the Cumberland Plateau. Since then, we have seen a slowdown in gas drilling as prices tumbled.

The low oil prices during the winter of 2008-09 slowed oil drilling programs, but they are rebounding nicely in tandem with oil prices, and hopefully are on the way to a strong recovery. Tennessee operators are planning drilling programs for the coming year, and a few new companies have moved into the state and intend to drill for both gas and oil.

With oil prices above \$80 a barrel, we are seeing a switch from drilling primarily for gas in the Chattanooga Shale to a renewed interest in drilling for oil. Oil exploration targets include the Monteagle formation, and to a lesser extent the Trenton and Stones River formations on the Cumberland Plateau; and the Trenton, Stones

River and Knox formations in Overton, Pickett and Fentress counties in the Eastern Highland Rim area.

Higher oil prices have increased interest in developing oil not only in areas of known production, but in places where little or no oil has been produced. Companies have shown interest in areas west and north of Nashville in middle Tennessee, and in areas near the Tennessee River in northwest-middle Tennessee.

When natural gas prices rebound—and they will—there are plenty of places left to drill for gas in the Chattanooga Shale on the northern plateau, as well as in the virtually untouched central and southern portions of the Cumberland Plateau. Even under the northern portions of the Highland Rim, the Chattanooga Shale is thick enough for commercial gas production, but the burial depth may or may not be great enough. There have been thousands of acres leased in these regions; hopefully drilling activity will follow.

The geology in these areas is similar to other parts of the state that have produced oil and gas. Only about 15 percent of the state of Tennessee has oil or gas production, but most geologists believe 60-70 percent of the state has the potential to produce crude oil and/or natural gas.

Significant Discoveries

A slow national economy, uncertainty about what kind of tax and regulatory changes will come out of Washington, and low natural gas prices have had a drag effect on drilling in Tennessee. There is guarded optimism, however, as the total number of drilling permits is down only slightly from last year, and some important discoveries have been made.

These include wells in the Black Hollow Oil Field of Overton County, which has been extended significantly to the northwest, almost doubling in size. If the production trend continues, it soon will





connect with the Rocky Ridge Field and assure that this area continues to lead Tennessee in oil production.

The Douglas Branch Field in Morgan County—one of the oldest oil and gas fields in the state—has been the site of several new Monteagle oil wells. These wells are step-out locations to the southwest of the field's main body. There are numerous opportunities to drill adjacent to old production areas in Tennessee, since many old leases have expired.

The most interesting well for Tennessee in 2010 is a rank wildcat that was being drilled late in the year in Hickman County, approximately 40 miles west of Nashville. Planet Energy of Knoxville, Tn., which is the operator, has several thousand acres under lease in the area. It was drilling toward a proposed total depth of 6,900 feet. Results had been encouraging enough that Planet Energy was planning a second well and possibly more. Hickman County never has had commercial oil or gas production, and only a few shallow test wells have been drilled there.

A bright spot for the Tennessee natural gas industry is the possibility of using natural gas to generate electricity. Wellhead Energy Systems of Somerset, Ky., makes compact, portable natural gas-burning generator units, which can be tailored to the specific quantity of gas available. The Tennessee Valley Authority and local electric utilities seem to be cooperative.

While estimates vary on the net return from using natural gas to generate electricity, with low natural gas prices, this is one way to maximize the value of gas reserves. This should be especially helpful

for stranded gas that lacks pipeline access, or gas volumes that are not large enough to justify stripping to meet Btu or nitrogen content requirements.

A great thing about these electric generation units is that they are portable and interchangeable. As gas volumes increase or decrease, the size of the unit servicing that site can be changed. The units are enclosed, which increases safety and decreases noise.

Regulatory Developments

On the government front, Tennessee's oil and gas industry continues to deal with permitting and regulation moving from the Division of Geology to the Division of Water Pollution Control, and the consequences of a couple well publicized blowouts. Several significant policy changes from regulators have affected how wells are drilled in Tennessee.

These deal mainly with casing programs as well as testing and the types of blowout preventers that must be used. To their credit, state regulators have not promulgated a one-size-fits-all rule, but have tried to set casing and BOP requirements to fit the conditions found in different geologic regions of the state.

Several other rule changes have been proposed and are under preliminary review by the Tennessee Oil and Gas Board. Among these are new graduated plugging bond requirements. This reflects the greater depths that many wells are being drilled to these days.

Other proposed changes include creating a temporarily abandoned well classification (along with an annual fee) and

extending the amount of time for filing most forms. Tennessee is moving slowly toward electronic filing. Most forms now can be downloaded from the Department of Environmental Conservation's website, and hopefully, a system soon will be put in place whereby all forms can be filed electronically.

As in other states where gas shales are being developed, whenever regulations are discussed, fracturing gets into the conversation. There are no regulations on the books in Tennessee directed specifically at fracturing, and none have been presented for discussion before the Oil and Gas Board. That probably will change in the near future. The state has regulations that cover casing programs and proper disposal of recovered treatment water, which includes reuse and disposal in injection wells. Fortunately, most frac jobs in Tennessee use relatively small amounts of water; nitrogen is more commonly used as a fracturing medium.

Public hearings will be held in 2011 regarding the proposed regulation changes, and TOGA expects there will be substantial discussion of fracturing. Hopefully, we can convince those who fear fracturing that it is a vital part of developing the shale and the future energy independence of the United States.

We look forward to operating in a more business friendly environment during 2011. Tennessee elected a pro-business Republican as its new governor. Bill Haslam, whose family owns the Pilot Travel centers, won with 65 percent of the vote. During the election, he was accused by his opponents of being "an oilman." Tennessee's oil and gas industry hopes he is. □