

Marcellus Shale

'A Changing Landscape'

By Darrin Youker

Like many farm families, Jim Van Blarcom wanted to see his children come back and work on the farm.

And like any businessman, Jim Van Blarcom wanted to expand and capitalize on new markets.

But for Van Blarcom and his family, the ability to grow did not directly depend on what the farm could produce. Instead, that growth came because of what was below their farm.

Van Blarcom's Bradford County farm, like much of Pennsylvania, sits atop the Marcellus Shale formation, a natural gas rich strata of rock. Stretching from New York to Ohio, the formation contains 141 trillion cubic tons of natural gas, making it one of the largest reserve of gas in the nation.

Leasing his farm for drilling has opened expansion opportunities Van Blarcom thought might have been out of reach. Van Blarcom wanted to expand, but was hesitant to take the financial risk.

"We could have done it, but I would not have taken the chance," said Van

Blarcom, a PFB member. "You go out on a limb a long way. The risk involved was too much."

Since 2008, interest in the Marcellus Shale formation has exploded, and it's changed the landscape of Pennsylvania.

Areas of Pennsylvania that were largely rural, with deep agriculture roots, have been turned into boom towns as gas companies have set up local headquarters to supervise drilling operations.

It's turned quiet areas of the Keystone state into industrial centers. Rural roads have seen a significant upswing in trucks, and house and land values have risen considerably.

Bradford County has seen the most dramatic change. It leads Pennsylvania in well production in the Marcellus Shale field. The county has the lowest rate of unemployment in the state.

Historically, Bradford County was a farming community, ranking sixth in terms of milk production.

How the county's agriculture community will respond, long-term, to the interest in drilling remains to be seen, as gas and royalty payments are bringing in new sources of income. Talisman Energy alone pays out around \$200,000 in royalty payments in Pennsylvania in one day.

For Jim Van Blarcom, the gas lease meant he was able to grow his cow herd, bring in his son and son-in-law into the business, and expand a sow operation he operates with his brother.

"That created 19 jobs right there," Van Blarcom said of the expansion of the sow operation.

But, Van Blarcom has known

A drilling rig, located adjacent to an existing wind turbine farm, shows the energy interest in Bradford County.

farmers in his area who have used the gas money to retire from the day to day rigors of farming.

"I see more people getting out," he said. "But there will be farms that will grow and take up that cropland."

Job and economic growth has largely been driven by gas drilling. Workers on the rigs make upwards of \$80,000 a year, but work 12-hour shifts in all kinds of weather.

The gas industry is luring away employees from other jobs, but that has created a ripple effect throughout much of the economy.

"For the last two or three years, anyone in this county who wanted to work could work," Van Blarcom said.

High in the hills of Bradford County, there's a picture of energy independence.

Stretching for dozens of miles along a ridgeline, long, sleek, turbines twist in the wind, generating electricity. They are a landmark in the region—their spinning blades visible for miles on a clear day.

On that same ridge, a stone's throw from those turning blades, a rig is busy finishing an operation that took a drill bit more than 5,000 miles below ground.

From the control tower, known as the "dog house," a foreman supervises as a crew removes hundreds of pipes from the drill hole. Removing pipe is one piece in making an active natural gas well.

Drilling in the Marcellus Shale field involves a process called fracking.

After the well is dug, a mixture of water, sand and chemicals is injected into the well under high pressure. The process breaks apart the gas-rich shale, allowing gas to seep into the well.

That well will continue producing gas, on average, for the next 30 years, said Jack Showers, a stakeholder relations advisor for Talisman Energy.

Fracking has been used by the energy industry for the better part of 50 years in gas exploration, Showers said. And geologists have known for decades that shale formations such as the Marcellus have held natural gas.

However, two developments in the past decade have put Pennsylvania in the forefront of natural gas exploration.

Energy companies have learned how to use fracking as an economic way to extract gas from tight, shale formations. Previous to the development of this new technology, it was far too expensive to try and extract gas out of shale.

Second, an estimate by Penn State geologist Terry Engelder on of the amount



Workers remove pipe from a gas well drilled in Bradford County

of gas in the formation caught the attention of energy companies.

Gas drilling in Pennsylvania will be a long-term prospect.

Pennsylvania's proximity to major East Coast markets and existing gas well infrastructure has made it an attractive state for drilling, Showers said.

But in order for drilling and gas development to continue in Pennsylvania, energy companies have to continue to demonstrate their ability to operate in an efficient and environmentally conscious manner, Showers said.

"We have to do this right, or we lose the ability to operate here," he said.

When gas drilling was ramping up in the northern tier, officials in Tioga County began to look at what impacts the activity might have on the community. County leaders drafted a water plan that would help protect aquifers and encourage drilling companies to seek surface water permits first for drilling activity, said Erick Coolidge, a Tioga County commissioner who operates a dairy farm.

That has helped Tioga County build relationships with Shell Energy—the main drilling company active in the county, Coolidge said. The company has also taken on the task of keeping the community informed of drilling activities through open houses and townhall meetings.

Drilling has helped keep gas prices low, which is benefiting homeowners, and ancillary business are benefiting from the activity, Coolidge said.

"The community is receiving the gas coming right out from under us," he said.

Pennsylvania has learned its lessons from the environmental problems that were caused by coal mining, and the overharvesting of timber, Coolidge said. Managed properly, natural gas can provide numerous benefits to the state, while at the same time protecting the environment, he said.

"It is not about us right now," said Coolidge, a PFB member. "It has to be about the generations that follow."

Coolidge, who owns a 200-head dairy farm in the county, has a well drilled on his property, and one day hopes to receive royalty payments once the well is connected to the pipeline. Money he has already received for drilling has put extra money into the farm.

Coolidge said he believes most farmers in the region will use natural gas revenue to reinvest in their operations.

"It is a different environment that we are working with here," he said.

For Van Blarcom, natural gas drilling has meant a renewed commitment to the industry he loves.

"I worked hard for 36 years to build this farm," Van Blarcom said. "I wouldn't be milking cows if it wasn't for the next generation."