

Shale Gas Roundup



Potter County, Pa.
2nd Quarter
2016

New ground rules for drillers clear hurdle

New environmental rules for gas and oil drilling in Pennsylvania continue to work their way through multiple hurdles in the state's regulatory approval process. Most recently, these "environmental protection performance standards" were approved on a 15-4 vote by the Pa. Environmental Quality Board, an independent agency responsible for adopting environmental regulations.

One proponent of the revised rules (Chapter 78) is John Quigley, secretary of the Pa. Dept. of Environmental Protection. "The regulations modernize and strengthen the environmental controls employed by both the conventional and unconventional industries to assure the protection of public health, safety, and the environment," Secretary Quigley said. "In addressing surface activities at well sites, the amendments improve protection of water resources, add public resources considerations, protect public health and safety, address landowner concerns, enhance transparency, and improve data management."

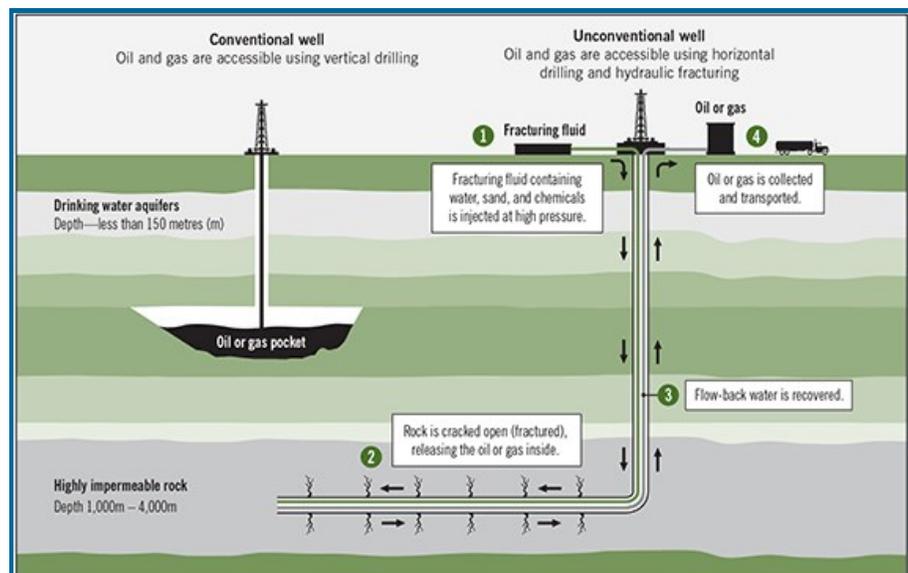
Now, the Chapter 78 revisions go before the Independent Regulatory Review Commission and the separate Environmental Resources and Energy Committees of both the Senate and the House. Some of the regulations are less restrictive for conventional gas and oil development, as compared to the deeper and more complex shale gas/oil drilling.

A number of energy industry representatives consider the regulations to be too burdensome in five general areas: public resources and special concern species; water supply replacement standards; abandoned well identification and plugging; waste handling at well sites; and noise reduction standards. Secretary Quigley believes the rule changes have struck the proper balance. "These updated rules are long overdue and it's time to get them across the finish line for the protection of public health, for industry certainty, and for the protection of our state's environment," said Quigley.

"The changes are incremental, balanced, and appropriate, and are the result of one of the most transparent and engaged public processes in the history of the agency," he added.

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Pitt-Bradford Degree Program Prepares Job-Seekers

A lingering recession in the gas and oil industry provides a window of opportunity for job-seekers to get the training they need.

University of Pittsburgh at Bradford offers options that range from basic workforce training to advanced education in engineering and other professional fields.

One of UPB's most popular offerings is its two-year petroleum technology degree program. Graduates are qualified to work inland and in offshore oil and gas exploration, or they can build on the associate degree with more advanced education.

Petroleum technology majors take courses in petroleum industry, environment, safety, petroleum geology/geophysics, drilling and completion, well log interpretation, geophysical prospecting and natural gas chemistry, gathering and transportation. Career counseling and job placement assistance are offered. Administrators work with the Pa. Independent Oil and Gas Assn., the International Assn. of Oil & Gas Producers, the International Petroleum Industry Environmental, and the Conservation Association. Industry groups and other supporters have donated money for equipment acquisition and financial aid.

More information is available from Dr. Matt Kropf at 814-362-5197.



Dr. Assad Panah (left) is director of the petroleum technology program and professor of geology at the University of Pittsburgh at Bradford. Here, he demonstrates a new computer program to (from left) Doug Kuntz, president and CEO of Pennsylvania General Energy Co.; Tim Lyon, sales engineer for Schlumberger; and Dr. Livingston Alexander, president of University of Pittsburgh at Bradford.

UPB Establishes Energy Institute



Matt Kropf

University of Pittsburgh at Bradford has formed an Energy Institute to:

- Educate undergraduate students and train the workforce needed by the energy industry of the region.
- Support that industry in developing, establishing and improving operating processes.
- Stimulate thinking throughout the region about renewable energy.

According to institute director Dr. Matt Kropf, gas and oil extraction is a cyclical industry. The Energy Institute seeks to meet workforce needs through academic programming and employer-driven training programs.

It also supports renewable energy through faculty research, involvement in the commercial projects of industry partners, and collaboration with the University of Pittsburgh's Center for Energy.

Methane Leak Issue Sparks Latest Controversy

One of the most complex topics surrounding Pennsylvania's shale gas development is the impact of methane emissions on the environment.

An announcement earlier this year that the Pa. Dept. of Environmental Protection (DEP) is cracking down on "fugitive leaks" from gas production has touched off the latest round of controversy between regulators and industry advocates. DEP says that with more than 500 compressor stations, 3,300 well pads – most with multiple wells -- and thousands of miles of pipelines, the shale gas industry needs to clean up its act before all of these numbers multiply.

"Methane can escape at every stage of gas production, including at the wellhead, the pipeline delivery systems and compressor stations," DEP said. "While we may be in a lull in drilling right now, production is still very high, and transmission infrastructure is booming, so it's important to act now."

Methane is a potent greenhouse gas that can trap heat in the atmosphere. Pennsylvania's regulations will require more inspections, more leak detections and repairs. Industry trade groups are voicing their opposition. They point out that Pennsylvania has greatly reduced its release of another greenhouse gas, carbon dioxide, by switching from coal to natural gas to fuel power plants.

"Additional regulations on methane could discourage the shale energy revolution that has helped America lead the world in reducing carbon dioxide emissions," said Stephanie Wissman, who directs the Pennsylvania Chapter of the American Petroleum Institute.

Aaron Jacobs-Smith, an attorney with the Clean Air Council, praised the methane strategy but remains concerned the new rules don't address the older, conventional gas industry or the methane leaking from Pennsylvania's thousands of abandoned wells. Many environmentalists say that, aside from the emissions question, relying on any new fossil fuel to solve the climate problem blocks the development of renewables.

DEP's proposal, which is forecasted to cut methane releases by 40 percent, will go to the Environmental Quality Board for hearings. The department forecasts that the new regulations would take effect by late 2017. Meanwhile, scientists are collecting data to on how much colorless, odorless methane is leaking.



A U.S. Dept. of Energy grant has funded methane emission research by a Carnegie Mellon University team, led by professor Albert Presto (left). Above, researchers Xiang Lee and Melissa Sullivan prepare to measure methane from a site in Monroeville. Melissa Sullivan (right) uses an infrared camera to check a site for leakage.

Photos by Susan Phillips (StateImpact Pennsylvania)

Pipeline Report Finished: Now Comes The Hard Part

A fast-tracked Pennsylvania Pipeline Infrastructure Task Force delivered its recommendations to Governor Tom Wolf in February. Twelve high priorities were identified by the group, as well as some specific suggestions, all geared toward the responsible development of a natural gas pipeline infrastructure in Pennsylvania.

Industry analysts forecast that Pennsylvania will undergo a substantial pipeline infrastructure build-out over the next decade to transport gas and related byproducts from thousands of wells throughout the state. The governor created the task force to identify best practices for pipeline siting, permitting and safety. There were 48 voting members on the state-appointed panel, as well as more than 100 volunteers assisting in work groups. None of the recommendations is binding. They're designed to drive wider public dialogue on the critical, complex, and interrelated environmental and community issues surrounding development of the infrastructure needed to transport gas to market.

Pipeline infrastructure development is governed by a complicated matrix of federal and state laws and regulations, county plans, and local ordinances. Multiple agencies are involved in permitting and overseeing siting, construction, operation, and maintenance of infrastructure. Over the coming months, some of the recommendations will be evaluated for possible implementation by state regulators. Industries, communities, landowners and others affected by pipelines are also being encouraged to consider the task force report.



Coudersport photographer Curt Weinhold provided this picture of a Tioga County setting where workers were preparing to install pipes to usher shale gas to market.

Some of the top priorities in the report are:

- Employ construction methods that reduce environmental impact, particularly in the areas of stream crossings and protection of exceptional value and high-quality waters.
- Route pipelines to avoid/reduce environmental and community impacts by expanding Pa. One-Call to cover all classes of pipelines, and sharing rights-of-ways.
- Establish early coordination with local landowners and lessors, and educate landowners on pipeline development issues.
- Develop long-term operations and maintenance plans to ensure pipeline safety and integrity by training emergency responders.
- Ensure adequate agency staffing for reviewing pipeline infrastructure projects, and implement electronic permit submissions.
- Enhance workforce/economic development by attracting military veterans to the energy workforce and developing science, technology, engineering, and math (STEM) education in public schools.

A copy of the full report is available at the website, dep.pa.gov.

State Forest Land Gas Royalties Being Audited

With a downturn in the gas industry, Pennsylvania is getting less royalty money from drilling on public forest land. But the state also continues to have problems getting paid properly from the activity that's still happening.

Pa. Dept. of Conservation and Natural Resources, which manages drilling on public lands, recently hired an in-house auditor to review royalty payments from gas companies. "We looked at the receipts and the data and found discrepancies," says DCNR Secretary Cindy Dunn. When royalty errors do occur, she added, they overwhelmingly favor the gas companies.

In his budget proposal this year, Governor Tom Wolf seeks to move \$61 million from Pennsylvania's General Fund to offset a \$51 million reduction in funding from the Oil and Gas Lease Fund. The fund was created in 1955 so drilling royalties could be used for conservation purposes.

In 2009 the legislature approved a change to give the General Assembly control of the money. As the account grew with shale gas revenue, it was increasingly used to support DCNR's general operating expenses. Dunn says the volatility of energy markets makes it hard for the department to rely on royalty money. "DCNR was traditionally a General Fund agency, and that makes sense," she says. "It does not make sense to rely on something that fluctuates over time like the Oil and Gas Lease Fund."

More Drilling Coming On State Land

Nearly six years have passed since portions of state forest land in the region were opened up for shale gas drilling. Seneca Resources paid \$23.3 million to lease 7,440 acres between Denton Hill and Fox Hill, north and west of Ski Denton and the Pennsylvania Lumber Museum. Lease on a separate forest land tract of 3,698 acres north of Mina and west of Dingman Run Road, in Eulalia and Roulette townships, went to Penn Virginia Corp. for \$13.9 million. Chesapeake Energy Corp. bid \$7.2 million to drill on 2,952 acres in two tracts of state forest land in Lumber and Grove townships in southern Cameron County.

These were in addition to leases that have been in place for many years. Pennsylvania General Energy holds a grandfathered lease on 8,525 acres of state forest land in Potter County's Wharton and Eulalia townships. Seneca Resources is leasing 320 acres in Keating Township.

CNX leases 4,032 acres in Wharton, Portage and Lumber townships (Potter and Cameron counties). An 8,000-acre tract in Cameron, Elk and Clearfield counties is leased by NCL Appalachian Partners and Ultra Resources.

(Story continues on next page)



This aerial photo of a shale gas well pad on state forest land in Tioga County demonstrates the "footprint" that the infrastructure makes. Pennsylvania has little control over much of its state forest, park and game lands because the subsurface rights are privately owned.

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But leases aren't the only way shale gas companies can tap into the shale gas reserves buried deep beneath Pennsylvania's state forest, park and game lands. Private interests own all or parts of the mineral rights on a large proportion of state-owned lands in the region. Industry experts believe that, once gas prices rise to make drilling profitable and pipelines are in place to market the gas, there will be a significant amount of activity on state land.

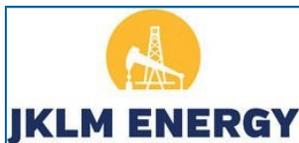
Well pads and related infrastructure will result in clearing timber and fragmenting large expanses of public land. For the leased property, the state imposes provisions to protect natural resources and wildlife while limiting the impact of energy production. However, under state law, owners of subsurface rights have the authority to pursue those resources as they see fit. Their rights have primacy over the surface owners' rights.

Tale Of Three Energy Companies



Two area heavyweights in the gas industry – Seneca Resources and Chesapeake Energy -- are scaling down, which will have a significant economic impact on the region. Seneca has idled two-thirds of its operations, according to spokesman Rob Boulware. He cited low gas prices and a net loss of \$189.1 million in the first quarter of the 2016 fiscal year. The company was operating three drilling rigs in the region as recently as last summer. Plans now call for one rig to be operating across the Appalachian Basin through 2017 and possibly beyond. From 2013 to 2015, Seneca has spent \$52 million with 91 businesses in Elk County; and \$32 million with 106 businesses in McKean County. The company has also been producing gas from state forest land in Cameron and Potter counties.

Chesapeake Energy, has shut down all drilling in both the Marcellus and Utica shale formations. Chesapeake is one of the state's largest gas producers with more than 800 active wells. The Oklahoma-based oil and gas producer reported a net loss of \$14.8 billion in 2015. It put just three new Marcellus shale gas wells on production last year, compared to 25 new wells in 2014. Chesapeake also plans to cut its capital expenditures by more than half in 2016 and sell off between \$500 million and \$1 billion in assets. The company divested \$700 million in assets in 2015. Chesapeake has racked up about \$1.4 million in fines with 428 violations. It's also facing allegations of cheating Pennsylvania leaseholders out of royalties, which the company denies.



Meanwhile, JKLM Energy plans to resume operations in Potter County with new wells near Reese Hollow, Cherry Springs Road and in northeastern Potter County near the Tioga border.



This publication is produced by the Natural Gas Resource Center in Coudersport, Pennsylvania. Previous editions are available in the website, pottercountypa.net. Anyone with story ideas or comments should contact Paul Heimel (pheimel@pottercountypa.net).