



Pennsylvania House of Representatives Environmental Resources and Energy Committee

Testimony on April 15, 2009

Presented by: Thomas B. Murphy, Extension Educator with Penn State Cooperative Extension

Good afternoon. Chairman George, members of the House Environmental Resources and Energy Committee, I would like to thank you for the opportunity to present here today and discuss the educational efforts made in Pennsylvania by Cooperative Extension on the topic of Marcellus shale exploration and development. My name is Tom Murphy, an Extension Educator with Penn State University based in the College of Agricultural Sciences, Cooperative Extension.

Why Penn State?

Cooperative Extension has been working with landowners in the State since 1914 on a multitude of issues they have experienced over that time frame. In the western portions of the state, that has included topics related to leasing their land for gas exploration and the restoration of that land back to a productive state. That effort has mainly been confined to work with shallow natural gas and oil wells which have a long history, as you know, in PA. More recently, the story has changed due to the increasing demand for new supplies of cleaner-burning fossil fuels, of which natural gas is a preferred commodity in the energy production industry. As companies looked at the Appalachian Basin, and specifically Pennsylvania, for new supplies of natural gas, their leasing agents (or landmen) started researching properties to lease throughout the Basin. Initially the renewed interest was the deep Trenton Black River formation due to its vast commercial potential. Within the last 4 years, Marcellus has become the principal target due to a variety of factors. And again landowners asked for non-biased advice from Penn State, especially since much of the newly targeted Marcellus footprint is not in the traditional natural gas areas of the state.

Why Marcellus?

First is the size and scale of the resource. Dr. Terry Engelder, Geologist, Earth and Mineral Sciences, Penn State University, somewhat recently re-evaluated his earlier work and now estimates there are 363 trillion cubic feet of recoverable natural gas in the Marcellus shale. Some companies working in PA are looking at numbers that could be considerably higher. And with improvements in technology and well completion techniques over the expected life of the Marcellus play, which is likely to be multiple decades, the amount of recoverable gas is likely to increase in areas where it is discovered. Horizontal drilling and hydrofracing technologies have now been perfected to the point where they can make what was once a non-productive shale, commercially viable. Proximity to market is also key in this discussion, with much of the residential and industrial use of natural gas in the Northeast corridor of the U.S. Even with the spot market price of natural gas at a 6 year low, energy companies are still moving ahead with projects in PA. New service providers are also arriving or increasing their operations in the Marcellus region, largely in PA, anticipating the return of more favorable gas prices and opportunity to make a reasonable profit. Although the gas industry's expansion plans have slowed for 2009, increased availability of capital, infrastructure build out, regulatory streamlining, and increased industrial demand for gas as the economy improves, will likely all contribute to the expanded exploration and development of Marcellus shale gas. We also should recognize that Marcellus shale is not the only gas producing horizon being examined by the industry. Several other shale formations, which may not have been commercially viable by themselves, could now become targets with the infrastructure built on Marcellus economics.

Education

Cooperative Extension has been providing education to a wide variety of audiences due to the demand for the information from a source viewed as non-biased. Seminar participants have been principally landowners looking for factual information before signing a lease. Over 30,000 people have attended these sessions as they have been offered around the State. Tens of thousands of others have participated through other mass media venues. Due to the complexity of typical gas leases, most landowners either just signed a lease as presented with little thought on the potential long-term impact other than that measured in dollars, or they learned the value of having a qualified legal review and modification of the lease through the use of appropriate addendums, creating more favorable terms for them. The financial implications of signing a

lease could be very large and many are likely to influence several generations of the same family. Potential royalty payments, if they materialize, could extend the effect even further. And landowners are now being faced with additional decisions about leasing land for water withdrawal access points, compressor buildings, pipelines, and a more recent effort to lease parcels for underground injection wells for waste water disposal. Last night over 175 people attended our first educational meeting with the purpose of informing the public on the process of injecting waste fluids underground. Demand for information on topics related to Marcellus continues to increase in Pennsylvania. And it should be noted that although many of these seminars are held under the banner of Cooperative Extension, they are typically a collaborative effort with various state agencies, related industry representatives, and environmental organizations. There is also a strong partnership with elected officials at the state, county, and local levels along with the associations that represent their interests in PA.

The Audience

As I mentioned, the audience continues to grow for information on Marcellus shale. As it does, it also continues to evolve. What was typically a rural landowner crowd in the recent past, has now become a group interested in a ranging list of topics with a large percentage seeking additional information on environmental impact, namely water. With much misinformation spread on the internet, Extension's meetings have taken new directions. Technical expertise from our specialists are helping Commonwealth residents from all corners of the State understand what the development of Marcellus will mean in PA. Much is spoken about the potential economic benefits that development of the shale will mean here. But many in the state are asking about the non-economic side of the equation as well. If this industry is going to increase and flourish here, it is important for all citizens impacted to understand the dynamics of the processes unfolding around them and be comfortable with the outcome. This education is sometimes achieved by attending a meeting and sometimes by personally participating in a company-sponsored well tour. And with the new regulations being announced today on waste water management of gas drilling fluids, there is a renewed need by many to understand that side of the infrastructure as well.

Information

Our Marcellus Education Team members have written a number of printed materials for use by the public and elected officials as they work through a vast array of decisions connected with the development of the Marcellus shale in PA. Whether it is questions on what should be in an equitable lease agreement between landowner and energy company, or what a township official should know about mitigating impacts to rural roads, we now have timely information for people to study which should lead to the best decisions possible. These materials also include a fact sheet series designed to go more in depth on specific topics such as impacts to woodlands, water testing specific to a gas drilling region, resolving soil compaction associated with pipeline installation, and considerations for dealing with the influx of cash from a successfully executed lease. The series is intended to be ongoing with additional fact sheets added as demand for new topics develops. Portions of these materials are being made available for your review today and dissemination to your constituents should you so desire. The Team is also hosting an educational web site on our College home page, www.naturalgas.psu.edu, for the purpose of providing up to date information for interested individuals. Our University public broadcasting unit, WPSU, also developed a related web site www.wpsu.org/gasrush which contains numerous video-based presentations and archived programs on Marcellus topics. Web-based information has served our clientele efficiently and continues to evolve as well. More recent additions have been a webinar series hosting experts on various aspects of the Marcellus development. The next one will be on Thursday from 1 to 2 pm and feature Dr. Terry Engelder from Penn State.

Future Efforts

Clearly the mission of Cooperative Extension on this topic is simply education. Tens of thousands of Pennsylvania residents, your constituents, and neighbors to many of us, have made much more informed decisions due to learning more about Marcellus shale exploration and development. This education has afforded many of them a much greater return during lease negotiations which is surely already acting as a stimulus in their communities. Conversations with just two bankers in the northern tier of PA recently, pointed to \$58 million dollars received on deposit and attributed to gas leasing by area landowners. That has been played out in many regions of PA and will multiply with the addition of royalties as the Marcellus is developed. But with the positive news of new, good-paying gas industry jobs and economic benefits, there are also questions about increased road and bridge impacts and environmental concerns.

Extension's educational effort will be ongoing and targeting this discussion broadly in concert with many University, agency, and industry stakeholders.

Thank you again for your time today. If you have additional questions or would like to request one of our programs for you, your staff, or your constituents, please let me know.

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