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SRBC's role in regulating natural gas development in the Marcellus Shale

Part two - What SRBC does not regulate and trends in water usage

February 17, 2011 - By Susan Obleski

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This column is presented weekly by the Public Education subcommittee of the Clinton County Natural Gas Task Force in an effort to provide accurate, up-to-date information on activities surrounding the Marcellus Shale formation and the natural gas exploration industry. For more information on Task Force activities, visit the Task Force page on the Clinton County government website at www.clintoncountypa.com.

This represents the second in a series of articles from the Susquehanna River Basin Commission covering its role as it relates to the natural gas industry.

This article continues the focus on the Susquehanna River Basin Commission's (SRBC) regulation of natural gas well development in the Marcellus Shale, using the question and answer format drawn from SRBC's Frequently Asked Questions handout, which is available through SRBC's website at www.srb.net/programs/marcellus-faq.htm.

This week's questions will: (1) Help readers understand what SRBC does not regulate regarding natural gas activities, and (2) give readers a perspective on amounts of water used for drilling and hydrofracturing activities in the Susquehanna basin.

Q: Does SRBC regulate for water quality?

No. SRBC has never regulated water quality for any projects, whether for natural gas development or other purposes. The framers of the Susquehanna River Basin Compact were very deliberate when they directed SRBC to avoid duplicating the efforts of its four members - the commonwealth of Pennsylvania, the states of New York and Maryland and the federal government. Since the states had already assumed responsibility for regulating water quality, SRBC consciously chose not to regulate water quality to avoid what would be an obvious duplication with regulatory agencies such as the Pennsylvania Department of Environmental Protection.

Q: Does SRBC regulate frac fluid treatment, recycling and disposal?

No. SRBC does not regulate the capture, storage, transport, treatment, recycling or disposal of wastewater - known as flowback fluids - from natural gas drilling and hydrofracturing activities. The state agencies have the lead on those regulations. SRBC does, however, require natural gas companies to abide by all other agencies' water quality and waste management requirements; failure to do so can result in the modification, suspension or revocation of SRBC's approval. SRBC also requires natural gas companies to report post-hydrofracturing information to the commission. These reports allow SRBC to track freshwater used, recycled flowback fluids utilized, origin of both freshwater/wastewater and destinations of wastewater and



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freshwater, wastewater and discharges of wastewater and unused freshwater. And if natural gas companies propose to import flowback fluids for their operations in the Susquehanna River Basin, the recycled wastewater will be regulated as would any other water source under SRBC's diversion regulation.

Q: How much water has SRBC approved for natural gas development and how much more does SRBC anticipate approving?

A typical Marcellus Shale hydraulic fracturing operation for a horizontal gas well uses three to five million gallons of water over a two- to five-day period. As the natural gas industry has expanded its activities in the Susquehanna River Basin, it continues to seek new withdrawals so that water sources can be closer to the drilling areas, thereby minimizing hauling distances for water tanker trucks or lengths of water pipelines. SRBC allows gas companies to utilize shared sources (stream withdrawals) previously approved for use by another natural gas company to help reduce the number of intake locations, as long as the access and use agreements are registered with SRBC. As of September 2010, SRBC had approved withdrawals totaling approximately 79 million gallons per day at 133 locations largely in the Pennsylvania portion of the basin but a few in the New York portion as well.

As demand for water increases, the industry continues to focus on improved water management and conservation practices, including the reuse of flowback and production fluids, thereby reducing the quantity of freshwater necessary for hydrofracturing. Recent estimates indicate that the actual water use from the entire Marcellus and Utica Shale natural gas industry at full build-out is expected to be approximately 30 million gallons per day (gpd). To put that into perspective, water use for recreation is about 50 million gpd, water use for power production is about 150 million gpd and water use for public water supplies is about 325 million gpd. Although the move from exploration to production will provide management challenges and may necessitate regulatory changes, SRBC anticipates that gas industry water use can be accommodated along with demands from other uses.

Q: In addition to SRBC-approved withdrawals, what other sources of water can be used by natural gas companies?

SRBC's expedited approval-by-rule (ABR) process allows companies to use sources of water that have already been approved for their use at any of their drilling pads and to utilize shared sources (stream withdrawals) previously approved for use by another natural gas company, as long as access and use agreements are registered with SRBC. Gas companies may also request approval to use other sources of water, such as public water supplies or a source of lesser quality water, such as from wastewater or noncontact cooling.

In Pennsylvania, SRBC and the state Department of Environmental Protection are working with the industry to facilitate the withdrawal and use of impaired waters, including mine drainage (see photo of mine-drainage impacted river) and wastewater. This practice alone may greatly reduce existing stresses on the aquatic habitat in many areas. In addition, many of the gas companies are reusing up to 100 percent of the flowback fluids for other hydrofracturing sites.

Q: Can a private landowner sell water to the natural gas industry if its property has a pond, an old well or a stream?

Yes. The private landowner can sell water but must apply to and receive SRBC approval for the withdrawal as with any other public or business interest.

Q: What does a private landowner have to do to sell water to the gas industry?

In most instances, natural gas companies submit the applications to withdraw water from privately owned lands after reaching agreements with the landowner. However, private landowners may submit applications directly to SRBC requesting approval for a withdrawal and bulk sale of that water to the natural gas industry. The landowner must demonstrate, through written agreements,

that one or more natural gas companies have committed to purchase the water. The application process including forms, fees and notices is the same as for other project sponsors. Information about the process and the appropriate forms are available on SRBC's website.

Q: How much water from public water suppliers has been used?

Between June 2008 and October 2010, according to the post-hydrofracture reports for 338 wells in the Pennsylvania portion of the basin, about 314 million gallons which equates to about 38 percent of the water used in hydrofracturing has been provided by public water suppliers. Public water suppliers are second, only behind surface water withdrawals, in preference as water sources for the natural gas industry. Due to the coordinated nature of the review for a bulk water purchase from public water suppliers, it is usually "easier" for a natural gas company to get approved to use these sources than new withdrawal points. This allows for operations to commence faster, allowing time for permitting and constructing surface water withdrawals. The recent trend has been for natural gas companies to rely more heavily on their own surface withdrawals.

Q: When considering a request to transfer fracing fluids into the Susquehanna basin, what issues would be evaluated?

As for any in-basin diversion, SRBC staff would evaluate the water quality of the proposed water source, the proposed use within the basin and the project's location. SRBC staff would assess the potential of the proposed diversion to result in water quality degradation that may be injurious to any existing or potential groundwater or surface water use. If the water were to be used for hydrofracturing, quality impacts from discharge would not be significant but adequate controls during transport and containment and storage on-site would likely be evaluated to insure that the integrity of the basin's waters would not be adversely affected. Staff would also consider public concerns and any mitigating circumstances.

This article was submitted by Susan Obleski, director of communications, Susquehanna River Basin Commission. She can be reached by email at sobleski@srbc.net. Information was compiled largely from existing products collaboratively produced by SRBC staff.

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