

## **SRBC's Role in Regulating Natural Gas Development in the Marcellus Shale:**

### **Part Three – How SRBC Protects Streams and Ensures Compliance**

*This column is presented weekly by the Public Education sub-committee 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](http://www.clintoncountypa.com).*

*This represents the third 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 web site at [http://www.srbc.net/programs/marcellus\\_faq.htm](http://www.srbc.net/programs/marcellus_faq.htm).

This week's questions will help readers understand how SRBC: (1) protects streams during times of low flows; and (2) ensures compliance with its regulatory requirements.

#### **QUESTION: Does SRBC protect streams during low flows?**

Yes. SRBC reviews the quantity of a requested withdrawal and also considers the proposed rate of withdrawal in its evaluation of potential adverse impact on a stream during low flows.

SRBC uses a statistical estimate called the Q7-10 flow as an indicator of low flow conditions during drought. By definition, the Q7-10 flow represents the lowest average flow that would be experienced during a consecutive 7-day period that is estimated to recur on average only once in 10 years. The data



used to estimate the Q7-10 values come from streamflow quantity records from stream gaging stations operated by the



U.S. Geological Survey (*photo shows example of stream gage*), which are translated for estimating streamflow conditions at ungaged sites using statistical hydrologic principles and regional studies. Estimates of the Q7-10 flow are often used by state water resource agencies as the base flow condition in streams at which certain water quality standards apply, particularly for defining permit limits for effluent standards at wastewater treatment facilities.

In its program standards, SRBC has determined that the potential for adverse impacts must be addressed if a proposed withdrawal, either individually or cumulatively when coupled with withdrawals for upstream users, exceeds 10 percent of the Q7-10 flow. Only proposed withdrawals 10 percent or less than this very low flow are considered to have minimal impact on aquatic resources, competing users and downstream water quality.

If it is necessary to mitigate for potential adverse impacts from the proposed withdrawal, SRBC places a protective condition in its withdrawal approval—known as a passby flow.

**QUESTION: What is SRBC’s passby flow requirement and how does it protect streams?**

A passby flow is a prescribed streamflow below which nearby withdrawals must cease. SRBC often uses passby flows for defining limits in its approvals of stream withdrawals, essentially making the withdrawal cease at a particular flow threshold during periods of low streamflow and drought. The applicable passby flow threshold is prescribed in the approval and is site specific.

SRBC in its docket approval also establishes the monitoring protocols for the project sponsor. It is important to note that although streamflow may continue to decline after withdrawals cease, the passby flow requirement prevents the project’s withdrawal from further exacerbating naturally low flows in the stream system

The passby flow threshold is determined using published flow statistics, and factors in stream classification and information about the fishery and aquatic habitat that should be maintained. For certain streams, SRBC oversees an aquatic resource survey at the proposed withdrawal location to assess the condition of the aquatic community with the stream ecosystem as part of its technical review of an application for withdrawal (*photo shows some of the many aquatic species assessed during SRBC’s aquatic resources survey activities*).



**QUESTION: In addition to the requirement for mitigation, what other kinds of conditions are included in SRBC’s consumptive use approvals?**

The approval specifies the maximum daily quantity of consumptive water use; metering, monitoring and reporting requirements; daily monitoring of quantities; sources of water transported to and from the site; and the fate of flowback and produced fluids in the first 30 days after hydraulic fracturing. The approval also requires signage to be posted on location (*signage shown in photo*). Once signs are posted, the project sponsor is responsible for providing proof of installation (photographs) to SRBC. The project sponsor must submit a report documenting the water types and quantities used in each hydrofrac “event,” including an accounting of any produced flowback fluids or brines utilized by the project sponsor for hydrofracture stimulation. The project sponsor also must certify that all flowback and fluids produced in the first 30 days after hydraulic fracturing, including brines, have been treated and disposed of in accordance with applicable state and federal laws, and any unused (surplus) water was not discharged back to the waters of the basin without appropriate controls and treatment to prevent the spread of aquatic nuisance species. All necessary permits or approvals required by local, state, or federal agencies must also be obtained.



**QUESTION: What other kinds of conditions are included in SRBC’s withdrawal approvals?**

SRBC imposes certain requirements on sponsors of water withdrawal projects including a specified maximum rate of withdrawal and maximum daily withdrawal amount—and notably the metering, monitoring and reporting requirements to insure compliance with these conditions—which are intended to control and track quantities of water withdrawn daily at each location. Intake design and metering specifications, as well as a disinfection plan or other controls to prevent the spread of aquatic nuisance species, also are approved within dockets. With respect to direct regulation of water quality aspects of projects, SRBC relies on the agencies of its member jurisdictions with those existing authorities (e.g., the Pennsylvania Department of Environmental Protection and the New York State Department of Environmental Conservation) as directed by the policy established in the Susquehanna River Basin Compact. Dockets may be found at SRBC’s web site at [www.srbc.net](http://www.srbc.net).

Dockets also include provisions for reopening the approval as necessary, and a limited term of operation, currently set at 4 years for withdrawals related to natural gas projects. All dockets for natural gas include a provision requiring signage at facility locations.

**QUESTION: What does SRBC do to ensure compliance with its regulatory program?**

SRBC has the authority to take enforcement action against companies that fail to gain SRBC approval or violate the terms and conditions of approvals. For approved projects, SRBC requires metering to document daily quantities withdrawn or used, monitoring of approval conditions such as protective passby flows, and reporting (commonly quarterly) of monitoring data. The monitoring data are screened for compliance with docket conditions upon receipt. Although this information is typically reported quarterly, it can be requested at any time deemed necessary/appropriate by SRBC staff.

Approved projects are also subject to inspection at key points during construction and prior to operation, and periodically during the term of the approval (*photo shows SRBC inspectors*). Meters must be certified for accuracy, and compliance with signage requirements is documented through photographs provided to SRBC.



SRBC’s inspectors are regularly on patrol ensuring program requirements are met by project sponsors. All compliance staff members have been tasked with creating a strong field presence in order to effectively monitor the Marcellus Shale operations. Along with this task, SRBC believes it is essential to take advantage of all opportunities to educate the general public on SRBC’s role in regulating the natural gas industry.

**QUESTION: When does SRBC do its inspections and where are the inspectors located?**

SRBC inspections occur during regular business hours, as well as non-standard work hours including evenings, weekends and holidays. Inspections are conducted at random of both drilling pads and water withdrawal points. Field inspectors also respond to complaints received from the public. Most of SRBC’s inspectors live and work out of the northern tier of Pennsylvania and report to SRBC’s field office in Sayre, Bradford County, Pennsylvania.

*This article was submitted by Susan Obleski, Director of Communications, Susquehanna River Basin Commission, Email [sobleski@srbc.net](mailto:sobleski@srbc.net). Information was compiled largely from existing products collaboratively produced by SRBC staff.*