

May 7, 2010

Rockingham County Board of Supervisors  
20 East Gay Street  
Harrisonburg, VA 22802

**Re: Regulation of Marcellus Shale drilling under the Virginia Gas and Oil Act.**

Dear Rockingham County Board of Supervisors:

I am writing on behalf of Shenandoah Riverkeeper concerning the level of environmental review and protection under Virginia laws and regulations for natural gas operations using the hydraulic fracturing method in the Commonwealth's Marcellus Shale region. The Environmental Law and Conservation Clinic at the University of Virginia School of Law has been providing legal advice to the Shenandoah Riverkeeper in connection with the proposed drilling operation by Carrizo (Marcellus) LLC (Carrizo) in Rockingham County and Marcellus Shale gas drilling generally. Jeff Kelble asked me to send this letter on behalf of his organization to assist the Board of Supervisors in deciding whether to issue, and under what terms, a special use permit for the hydraulic fracturing well proposed by Carrizo.

Hydraulic fracturing is a natural gas extraction method whereby fracturing fluid is injected underground at high pressure into a shale gas formation, which causes cracks the target rock formation to release natural gas contained within. Fracturing fluid is typically composed of water, sand, and a number of chemicals that may be hazardous to humans and animals. Fracturing operations require a substantial amount of water, estimated at between two and nine million gallons per fracturing event (or "frack"). A given well typically has multiple "fracks" over the course of its productive life

Hydraulic fracturing operations in Virginia are regulated almost exclusively by the Department of Mines, Minerals, and Energy (DMME) under the Virginia Gas and Oil Act (Va. Code § 45.1-361 et seq.) and its implementing regulations (4 VAC 25-150 and -160 et seq.). To obtain a permit in Virginia, an applicant must submit a significant amount of information about a project's operations, including a plat (delineating the location of wells, etc.) and an operations plan (including construction, development, erosion and sediment control, and waste disposal methods). DMME then inspects the site and reviews permit application materials prior to approval. The statute and regulations

are designed to regulate gas drilling generally, and are not specifically tailored to Marcellus Shale hydraulic fracturing. DMME's primary experience with hydraulic fracturing is with respect to extraction of coal bed methane, and some of the regulations are tailored to that type of drilling.

DMME regulates how drilling is conducted, and its regulations include technical requirements for drilling operations designed to protect some environmental resources. To give just one example, the regulations include technical specifications designed to reduce the risk that drilling fluids will contaminate groundwater (*See* 4 VAC 25-150-340 (B), and 4 VAC 25-150-530(A)). The Gas and Oil Act, however, is not a comprehensive environmental protection statute, and it does not regulate all the effects of hydraulic fracturing on the environment or communities. The Gas and Oil Act and implementing regulations include no overall standard for permissible effects on the environment, the surrounding landscape, or the local community. Nor do the regulations include any overall review of the environmental effects of a given operation, either by itself or in conjunction with other drilling operations in a given area. If an application meets the basic technical requirements of the regulations, DMME must grant the permit, even if the drilling operation would fundamentally alter the surrounding landscape and community.

It is difficult to go through all of the regulations and illustrate this fundamental point in detail in this short letter, so I will just commend three examples for your consideration. First, at 4 VAC 25-150-300, the regulations include certain technical requirements for pits. The regulations require that pits be temporary, have a "properly" installed liner of a certain material and thickness, and only be used for certain materials, among other requirements. The regulations do not include any limitations on where pits may be located in relation to surface waters, floodplains, residences, or other sensitive areas. Locating a pit near a stream, or in the floodplain of a stream creates an unreasonable risk that the pit will be overtopped in the event of a high water event, but that is not a risk that is addressed in the DMME regulations. Second, the Oil and Gas Act does include spacing and setback requirements for wells (Code of Virginia § 45.1-31.17), but does not include any limitations on locating wells near sensitive resources. Thus there are no limitations on how close wells may be to streams, there are no restrictions on wells in the watersheds of public water supplies, and there are no limitations on locating wells near sensitive or valuable resources (such as a popular recreational fishery, for example).

Finally, the Gas and Oil Act and its regulations include no regulation of various facets of drilling that may be central to the purposes and objectives of any locality's zoning ordinance, land use regulations, and comprehensive plan. DMME does not analyze the appropriateness of the location of the well within the county, the compatibility of drilling operations with other land uses, the effect of road building and truck traffic, the effect of increased water usage, noise from construction and drilling activity, and the effect of the operation on the overall character of the district in which it is located. Moreover, DMME's statutes and regulations include no review of the cumulative effects of multiple drilling operations on the environment and other resources of a community. There are no standards in DMME's regulations that protect a county's

rural or conservation districts from being overwhelmed and fundamentally transformed by multiple drilling operations. Regulating the number of drilling operations and their effect on the county is fundamentally the responsibility of the county government pursuant to its land use regulations.

It is also important to recognize that gas drilling through hydraulic fracturing is in fact exempt from many central environmental protection statutes. On the federal level, Congress has exempted drilling well pads from stormwater regulation under the Clean Water Act (*See* 33 U.S.C. §1342(1)(2)) and hydraulic fracturing from the disclosure and regulatory provisions of the Safe Drinking Water Act (*See, Energy Policy Act of 2005, § 322*). On the state level, gas drilling is exempt from both the Erosion and Sediment Control Law (*See* Code of Virginia §10.1-560, exempting gas drilling from definition of “land disturbing activity”) and the Virginia Stormwater Act (*See* Code of Virginia §10.1-603.8(B)(1)). Although the DMME regulations included E & S and stormwater protections, the requirements in those regulations with respect to detail and the level of protection pale in comparison to actual E & S and VSMP regulations. To get some sense of this, you need only page through the E & S and stormwater provisions of the regulations (4 VAC 25-150-260 and 270), which total slightly more than five pages, in contrast to the voluminous regulations and technical standards associated with the state E & S and stormwater programs. The Gas and Oil Act also does not regulate the water withdrawals needed for hydraulic fracturing. Some withdrawals from surface waters may be regulated under the Virginia Water Protection Program, but under DMME permitting local communities have no ability to ensure that the sources and planned water usage of drilling operations are consistent with the localities plans and water needs.

An additional deficiency of the DMME permitting program, from a perspective of environmental protection, is the lack of opportunity for public participation. Although DMME must provide public notice of permit applications, only a limited category of persons may object to permit issuance. This limited group is composed of affected coal, mineral, gas, oil, or royalty owners, and “surface owners on tracts where the surface is to be disturbed” (*see* Va. Code § 45.1-361.30). Members of the public who are affected by the environmental impacts of a project have no standing to object to the issuance of a permit. These rules for public participation and standing fall far short of the level of public participation under environmental protection statutes in the Commonwealth, such as the Virginia Water Control Act. Also troubling is the minimal bond required of an applicant to ensure permit compliance and site remediation (DMME may request a “blanket bond” of \$25,000 for 1 to 15 wells) (*see* Va. Code § 45.1-361.31).

As County staff and the Board of Supervisors may be aware, ensuring that Marcellus Shale drilling can take place with minimal environmental and community effects is the subject of considerable ongoing discussion in the various states where such drilling has taken place. A common theme of this discussion has been the inadequacies of generally applicable regulations for conventional gas grilling to cope with the realities of hydraulic fracturing in the Marcellus Shale. For example, the New York Department of Environmental Conservation decided to prepare an environmental impact statement for Marcellus Shale drilling that would supplement a previous EIS it had prepared for

conventional gas drilling in order to assess the unique impacts of hydraulic fracturing in the Marcellus Shale and to develop environmental protections tailored to that activity. That process is still ongoing (details can be found at <http://www.dec.ny.gov/energy/46288.html>). Similarly, the Environmental Protection Agency has launched a study of the impacts of Marcellus Shale drilling on water quality and public health.

The Virginia Gas and Oil Act includes technical specifications that may provide some level of protection to groundwater and other resources (assuming, of course, that the regulations and specifications are followed and implemented). The statute, however, is simply not a comprehensive environmental protection statute, and does not address all of the effects of Marcellus Shale drilling on the environment, human health, or water quality. The County Board of Supervisors certainly has the authority and responsibility to impose limitations on such drilling that are needed to implement the County's zoning ordinance, comprehensive plan, and other land use regulations. The County should certainly not count on the Gas and Oil Act permitting program to protect the County and its residents from all of the effects of Marcellus Shale gas drilling.

Sincerely,

A handwritten signature in black ink, appearing to read 'L. Szeptycki', with a long horizontal stroke extending to the right.

Leon F. Szeptycki

Director

Environmental Law and Conservation Clinic

cc: Jeff Kelble