

# **Drilling the Marcellus Shale: The Industrialization of Rural West Virginia**

As a result of Marcellus shale development, West Virginia is experiencing a boom in gas drilling, the likes of which we have never seen. This drilling causes an exponential increase in surface disturbance, water use and waste disposal. It also requires compressor stations and staging areas and greatly increases demands on roads and other public infrastructure. The result is what can only be described as the” industrialization of rural West Virginia.”

Unfortunately, this new boom in drilling is largely unregulated. It is imperative that the West Virginia Legislature enact legislation to regulate Marcellus Shale drilling and protect the people and resources of the state. What follows are the essential elements that the WV Environmental Council and the WV Surface Owners’ Rights Organization believe should be included in such legislation.

**Public Notice of Permit Applications:** The impacts of Marcellus Shale operations are felt far beyond the surface tracts being disturbed. Impacts can occur to public lands, special places, high quality streams, neighboring landowners, and local infrastructure. Therefore, EVERY permit application to drill a horizontal should be officially noticed to the public (via newspaper ads, etc.), and should include a 30-day public comment period (this is in addition to all the appropriate notice provisions to surface owners and others).

## **Water Use and Wastewater Disposal**

- **Water Withdrawals** – WV should implement a permit system for large volume water withdrawals in order to maintain minimum in-stream flows. This is necessary to protect both aquatic life and downstream users.
- **Water Content** – WV should require an initial listing of chemicals to be used in fracturing a well in the permit application, and a complete listing of the actual chemicals used, and the amounts, should be filed with the completion report and be available to the public.
- **Wastewater Disposal** – The operator should be required to measure and report both the volume of water used to frac a well, and the volume that returns as flow-back water. WV should require the use of a “closed loop” system for large volume fracs. Flow-back water should not be stored in temporary impoundments or pits. Drilling pit wastewater should be disposed of in the same manner as flow-back water (no land application). The operator must maintain an appropriate evidentiary record tracking the disposal of all wastewater. WV should also prohibit the disposal of oil and gas well wastewater in underground mines.

## **Source Water Protection**

- There should be a minimum 150’ buffer zone to distance all oil and gas drilling activities from stream channels and wetlands.
- No well should be drilled within 2,500 feet of a surface water source that serves a public water system.
- All fresh water and flowback water impoundments, and all drilling pits should be constructed with a dual liner system including a leak detection system between the two liners.
- WV should end the practice of burying drilling pits on site. All drilling pit liners and drill cuttings should be removed and disposed of at licensed hazardous waste landfills.

- The operator should test all flow-back water and drill cuttings for the presence of naturally occurring radioactive materials (NORMs).
- All drill site reclamation, including pits, impoundments, roads and pipelines, must be timely and prevent the erosion and sedimentation of fresh water streams and wetlands.

### **Groundwater Protection**

- No well should be drilled within 1,000 feet from any existing building or water well without the written consent of the owner.
- No well should be drilled within 1,000 feet of a groundwater source that serves a public water system.
- The operator should be required to perform a “pre-drilling” test of all water wells and freshwater springs within 5,500 feet of the bore hole, and provide copies of the test results to the landowner. These tests must be conducted by a certified lab, and include testing for chemicals or chemical compounds known to be commonly used for hydraulic fracturing.
- The operator should be automatically required to replace damaged or lost groundwater supplies located within 2,500 feet of the well.
- An oil and gas inspector should be present during each phase of cementing well casings.

**Permit Fees and Well Bonds:** The increase in drilling activity has left the agency in the position of lacking both the funds and the staff to adequately review, evaluate and issue permits, observe field activities, and perform compliance monitoring. The permit fee for drilling a horizontal well should be set at a minimum of \$10,000 per well. In addition, a \$25,000 individual bond should be required for each horizontal well (no “blanket bonds”). Additional fees should be established for modifying a well work permit, reclamation, and annual inspections.

**Inspectors:** The Oil and Gas Inspectors’ Examining Board, which has been historically dominated by the regulated industry, should be eliminated. In its place, the agency should be given the authority to hire inspectors under the civil service system, with an appropriate training program and a six-month probationary period.

### **Additional Protections for Surface Owners:**

- Pre-permit notice for the surface owner. The notice should include copies of applicable statutes and rules and an offer to meet with the surface owner before coming onto the land.
- Pre-permit incentives to encourage the operator to work with the surface owner on matters of concern, such as planning where and how well sites and access roads will be built and reclaimed.
- Improvements to damage compensation procedures and standards.

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