Marcellus/Hydrofracking in West Virginia

Essential Elements Needed for Regulation and Enforcement of Marcellus and Other Gas Wells

1. Public Notice of Permit Applications: Marcellus Shale operations are so huge that the impacts 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.

A. Every permit application to drill a horizontal gas well 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).

B. Local citizens shall be encouraged to provide any information to DEP on issues DEP may not have considered.

2. Provisions for Surface Owners:

A. 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.

B. Pre-permit incentives to encourage the operator to work with the surface owner on planning where and how well sites and access roads will be built and reclaimed.

C. Improvements to damage compensation procedures and standards.

3. Water: Regulation from "Cradle to Grave"

A. Water Withdrawals – WV should implement a permit system for large volume water withdrawals. This is necessary to protect both aquatic life and downstream users. Currently there is nothing stopping a company from draining our streams dry. The current voluntary program would not be effective even if followed. The gauges showing stream flow are too far downstream to provide guidance about headwater streams, and nothing tells a driller how many other drillers are also withdrawing. Draining our streams, particularly during traditionally dry seasons, is bad for citizens, tourism, recreation, fishing, aquatic life and the overall health of our waterways.

B. Hydrofracking Fluid Contents – 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. This information should be provided to surface owners and made available to the public and local first responders. Use of readily available non-toxic substitutes should be required. Wells fractured with non-toxic fluids have been found to be effective and less costly.

C. Wastewater Disposal – The operator should be required to measure and report both the total volume of the fluids used to frack a well, and the volume that returns as flowback. WV should require the use of a "closed loop" system for hydrofracking. Closed loop drilling incurs a cost saving and also reduces road use, truck noise, emissions and dust, and flowback waste. Flowback water should not be stored in temporary impoundments or pits. Drilling pit wastewater should be disposed of in the same manner as flowback water (no land application). Prohibit disposal of brine, including coal bed methane brines, in underground mines. 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.

4. Source Water Protection

A. There should be a minimum 150' buffer zone to prohibit all oil and gas drilling activities from stream channels and wetlands.

B. No horizontal well should be drilled within 2,500 feet of a surface water source that serves a public water system. The 2500-foot minimum for public drinking water sources may not be adequate in the case of a major public water supply such as wells sited at the Morgantown Industrial Park. It may be necessary to distinguish major public water supplies from smaller drinking water wells and intakes. Alternatively, additional provisions may be needed for wells within a certain flow distance/time of water intakes. The goal should be to give adequate time for a well operator to notify downstream water sources in the event of an emergency. A key provision should be a requirement for an emergency response plan that includes notification to public water facilities.

C. All fresh water and flowback water impoundments and all drilling pits should be constructed with a dual liner system with a leak detection system installed between the two liners.

D. 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.

E. The operator should test all flow-back water and drill cuttings for the presence of naturally occurring radioactive materials (NORMs).

F. 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.

5. Groundwater Protection

A. No horizontal well should be drilled within 1,000 feet from any existing building or existing water well without the written consent of the owner.

B. No horizontal well should be drilled within 1,000 feet of a groundwater source that serves a public water system.

C. The operator of a horizontal well, at its expense, should be required to perform a "pre-drilling" baseline 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 landowners. 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, major ions, methane, and NORMs.

D. The operator should be automatically required to replace damaged or lost groundwater supplies located within 2,500 feet of the well.

E. An oil and gas inspector should be present during each phase of cementing well casings. The operator may not proceed to the next phase of the casing or drilling operation until an inspection has been performed and the current cementing approved.

6. Air Pollution

A. Require air pollution permits, monitoring, and Best Available Technology (BAT) requirements for all significant sources of air pollution, including wells, tanks, pipelines, and related oil and gas facilities wherever possible to protect human health and the environment. Air permits should address all collectively large significant emissions including particulates (dust), Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAP).

Capturing methane emissions from a well reduces air pollution and the methane can be sold to offset the costs associated with installing BAT.

7. Karst

A. A ban, or additional protections for, drilling in karst geology is needed.

8. DEP Permit Fees, Well Bonds, Inspectors, Rules

A. The WV DEP lacks 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.

B. Enact funding mechanisms for inspection and enforcement. Currently DEP has 14 inspectors for 50,000+ wells, with 900-3,000 new well permits per year.

C. 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.

D. Legislation should require DEP to promulgate rules that address the cumulative and indirect impacts from oil and gas facilities.

9. Seismic Exploration

A. Companies performing geophysical seismic testing should be required to notify surface owners and others at least thirty (30) days prior to any seismic testing activity and include a seventy-two (72) hour period in which such seismic testing activity will occur. The notice should include a reclamation plan.

10. Sediment Control

A. Require sediment control plans for well plugging, well roads (currently exempted in WV Code 22-6-6(d)).

11. Public Roads

A. Require repair bonds or similar mechanism to maintain public roads damaged by gas well development.

B. Require traffic safety control during times when school buses are on the roads.

12. Special Lands Protection

Gas drilling should be prohibited on public lands such as state and national parks and forests.

13. Compensation for Lost Property Values

A. Gas operations can have a negative effect on property values.

B. A process must be established for fair market value appraisal before any gas operations begin, and for periodic reappraisal over the life of a gas lease.

C. A mechanism to pay landowners for property value loss must be created.