



WEST VIRGINIA RIVERS COALITION

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Re: Comments on Rule 35CSR4 Oil and Gas Well Rules and Other Wells

The undersigned would like to applaud the amendments and additions proposed to Legislative Rule 35CSR4, particularly in respect to the protection of freshwater water resources throughout the drilling process, and steps taken to provide for more responsible reclamation. We are particularly pleased that section 16.4.d requires all pits and impoundments to have a synthetic liner, and we fully support the addition of section 35-4-21 “Construction of Pits and Impoundments with Capacity of Greater Than Five Thousand (5000) Barrels.”

However, we urge the WVDEP to further strengthen this rule to more fully protect public health and the environment, and we expand on these comments below.

GENERAL COMMENTS

Changes to well drilling rules of WVDEP’s Office of Oil and Gas are immensely important. It has been more than 25 years since any significant changes were made to West Virginia’s drilling rules. The state’s regulation of oil and gas well drilling already has many problems, and new exploration using new processes, such as horizontal drilling and large volume fracturing, is creating new kinds of problems that need to be addressed as well as the additional resources that will be needed to address them.

The West Virginia Legislature has vested in the WVDEP the authority “to use all practicable means and measures to prevent or eliminate harm to the environment.” In light of this authority, it is clearly the responsibility of WVDEP to consider the cumulative impacts of oil and gas well drilling on the environment including land, air, surface water and ground water resources. A successful state regulatory program must include constant review and revision of that regulatory program. The increased drilling in West Virginia, both in numbers of wells drilled and in the size and scope of those operations, necessitates the WVDEP to re-examine the capability of its regulatory program to carry out its primary protectionary function.

Due to the inadequacies of the current regulatory program, WVDEP is 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. Currently, there are more than 45,000 active gas wells in West Virginia. The number of well work permits issued varies from 900 to 3,000 each

year. The drilling of new wells requires several visits by an inspector and each active well should be inspected at least once annually. Yet, West Virginia has a total of only 16 inspectors.

Funding issues begin when an application to drill a well is received. The permit fees are extremely low compared to what it costs to drill a well (\$250,000 to \$1 million). West Virginia's "blanket bond" provision allows a producer to put an unlimited number of wells under a \$50,000 "blanket bond." That "blanket bond" is intended to cover the plugging costs of wells if the operator abandons the operation. It costs \$8,000 or \$10,000 or more to plug a well at the end of its useful life in order to prevent contamination of groundwater and other mineral resources. Is there any wonder that there are 10,000 wells that need to be plugged that are not being plugged?

Now come the new wells being drilled to the Marcellus Shale formation using new "slickwater" and other fracing techniques. These wells represent a huge leap in technology, and cause an exponential increase in surface disturbance, water use and waste disposal, and so pose a serious threat to our land and water resources:

- There will be an extensive number of the new Marcellus Shale wells. Some drillers have asked for, and received, permission from the Oil and Gas Conservation Commission to drill these wells as close as 1,000 feet from each other on the first half-million target acres of land in West Virginia – that would be a well on every 40 acres of land in West Virginia. They state they have 1,700 locations already pre-planned.
- Instead of a one or two acre drilling site on the surface, Marcellus Shale wells require five acres or more, possibly on every 40 acres.
- The bulldozed access roads will have 300 to 500 vehicle passes during the drilling phase alone, and many of those will be heavy tractor trailer loads. There is no requirement to gravel the roads even in the worst weather.
- Horizontal drilling techniques are even newer than "slickwater" fracing techniques. One horizontal well can in some places, be drilled instead of several vertical wells. Also, several horizontal wells can be drilled on a single well site. Using horizontal wells where they can be drilled would eliminate the need for many well sites and access roads and greatly reduce the risk of groundwater and surface water contamination that occurs at the beginning of the drilling of any well. However, West Virginia has no way to require developmental Marcellus Shale wells to be drilled horizontally instead of vertically where horizontal wells can be drilled.
- The fracing of a conventional shallow gas well requires less than 210,000 gallons of water. The new fracing techniques that make the drilling of Marcellus Shale wells possible require at least an Olympic swimming pool size impoundment of water. Vertically drilled Marcellus wells require at least 600,000 gallons of water with chemical additives, while horizontally drilled wells require up to three million gallons of water or more. New regulations are needed for the impoundments that contain these fluids, as the proposed rule recognizes.

- West Virginia has insufficient regulation for water withdrawals from streams, rivers and wells. The additional quantities of water needed in new drilling techniques will require additional regulation to prevent de-watering of these valuable resources.
- West Virginia has no requirement for public disclosure of, let alone regulation of, the chemicals that can be put into the water pumped down the well that flows back up to the surface before or during the start-up of production.
- There is a recognized lack of approved underground injection wells and wastewater treatment disposal facilities capable of handling frac flow-back water and produced brine.
- West Virginia has insufficient data to understand the levels of salt and natural occurring radioactive materials (NORMs) from deep geological formations that are brought to the surface as the result of drilling and fracing a well. We would encourage additional sampling and research.

The proposed agency rule makes some changes in response to the drilling of new Marcellus Shale formation wells. However, it is the undersigned citizens' position that additional changes should be made, and existing rules desperately need to be improved. Our specific comments and proposals are below.

SPECIFIC SECTION COMMENTS

35CSR4 Oil and Gas Wells and Other Wells

§35-4-2. Definitions.

Section 2.18. should be added to read:

“Fracing” shall mean the process of forcing material into a well under pressure in order to fracture the rock or shale in order to release gas.

Section 2.19. should be added to read:

“Frac flow-back” shall mean any fluids flowing back from a well before the well is put into production that contains the materials used in fracing a well.

§35-4-11 Operational Criteria

General comments:

Many areas in the eastern counties of West Virginia have a karst geology. Drilling in karst presents special problems. Although measures are taken to prevent contamination of groundwater, drilling can disturb the circulation of water in successive layers of caves, and it can affect wells and springs further from the drilling than the [rule] recognizes as the responsibility of the driller. Where there is karst geology, study should be done before permitting.

Section 11.6. should be amended to read:

Annual Inspection - The operator shall conduct an inspection at the surface of each unplugged well at which drilling has been completed for more than five (5) years. Such an inspection shall be conducted no less frequently than once each calendar year in a method approved by the Chief. Certification of the performance of such inspection, in a form approved by the Chief, shall be filed with the Office of Oil and Gas in conjunction with the operator's annual report as required ~~under~~ by subsection 15.1 below. Should the operator detect evidence of any leakage or other indications of casing integrity failure, the operator shall give notice to the Office of Oil and Gas within 24 hours and take such measures as may be appropriate to eliminate the leakage. The district inspector shall verify within 5 days that the leakage has been eliminated. If the leakage has not been eliminated, the Chief shall order the well to be plugged.

§35-4-16. Reclamation

General comments:

Plugging operations are exempt from filing a full soil erosion and sediment control plan by W.Va. Code 22-6-6(d). The result has been that in some cases no re-seeding etc. is done at all. The operator should at least be required to show the state and the surface owner the instructions the operator should be giving to its employees or contractors for removing the well site and access road and reseedling/revegetating the land. The well site and access road should be removed unless one of the surface owners agrees that it not occur. If the road and site are to be left in place, only the proposed reseedling/revegetation should be included with the permit. The cost of plugging should be minimized in order to encourage plugging.

The construction and reclamation plan should show where the pipeline is going to go and how it is going to be reclaimed. This is not the case now. Surface owners are surprised when the bulldozer takes off in a new direction that was not designated in the well work application and the operator tells them for the first time that there is going to be a pipeline there.

Section 16.1.a. should be amended to read:

All proposed reclamation methods for construction of roads, drilling locations, pipelines, pits and impoundments, if any, or alternative overflow prevention facilities, shall be submitted on Form WW-9 with the application for any permit required by W. Va. Code §22-6-6, except a permit to plug a well. Form WW-9 shall include an estimate of the amount of acreage to be disturbed, the location of all pits at the drill site (with approximate dimensions of the drill site and pits), and the land application area if applicable. Drawings must be clear, concise and complete so that all parties understand the proposed activity. Such proposed reclamation methods shall be approved by the Chief or his designate prior to the issuance of the permit, and all reclamation shall be done under the supervision of the Chief. With the consent of this Chief or his designee, the reclamation may be altered from that set out in said Form WW-9, if found necessary due to topography or other conditions not apparent upon initial submission and approval of the proposed reclamation methods. Landowners shall be consulted prior to the approval of any alterations.

Section 16.1.b. should be added to read:

When plugging a well a full reclamation plan is not required. However the proposal for deconstruction of the site and access road shall be included with the permit application unless deconstruction of the well site or access road or both is waived in writing by an owner of the surface. The application for the plugging permit shall also contain proposed re-vegetation.

Section 16.2. and 16.3. Access road and drilling sites.

General comment:

The rule currently allows all but “excess” and “excessive” sedimentation in the streams below the sites and roads. Sedimentation should be nonexistent or minimized.

Section 16.2. should be amended to read:

Access Roads – All access roads shall be constructed and maintained so as to prevent ~~excess~~ sedimentation, maintain natural drainage areas and to direct or carry away from disturbed areas surface water run-off from undisturbed areas.

Section 16.3. should be amended to read

Drilling Sites – Drilling sites shall be constructed and maintained to prevent surface run-off carrying ~~excessive~~ sedimentation from the site, to confine all materials leaked or spilled as a result of drilling operations to the drilling site, and to prevent ~~excess~~ sedimentation by not placing in any stream any material moved or cut. Upon the plugging of a non-productive well, whether as a continuous operation with other permitted well work or otherwise, all cementing and other waste materials resulting therefrom shall be disposed of at a facility authorized to receive such material ~~retained on the drilling site~~.

16.4. Wastewater Pits and Freshwater Impoundments

General Comments:

We applaud that the Rule is finally amended to require liners of all pits and impoundments. This requirement is long overdue.

The driller should be required to take drilling pit liners and the pit waste contained in them at the end of drilling to a landfill instead of burying them on a surface owners’ land and sterilizing the area from future construction and other uses. Under current rule, the operator is not even required to place a marker or monument to show where the pit waste has been buried.

The rule has no limitations on pit location with respect to ground or surface water. DEP should develop siting requirements for pits to prevent contamination of freshwater and to protect human health and the environment. In particular, there should be restrictions on placement of pits in karst areas and alluvium.

Section 16.4.h. should be amended to read:

All ~~drilling pits, impoundments,~~ and alternative overflow prevention facilities shall be constructed, maintained and reclaimed so as not to be left in such condition as to constitute a hazard or to prevent use of the surface for ~~agricultural purposes~~ any use available prior to the well activity after the expiration of the six (6) month or extended period for reclamation prescribed by W. Va. Code §22-6-30. Following removal of all fluids, the remaining material and the liner shall be removed and disposed of through a facility approved for the receipt of those wastes. The reclamation period for pits and impoundments permitted with multiple wells shall be calculated from the date the last well was drilled.

Section 16.4.i.:

General comment:

For an increased level of safety, pits and impoundments should incorporate lifelines and perimeter fencing. Additionally, as these sites are likely to have additional equipment during the drilling and completion of the well, operators must plan for adequate spacing of equipment and access to all areas of the site to assist in creating a safe working area.

Section 16.4.i. should be added to read:

For increased safety, pits and impoundments must incorporate lifelines and perimeter fencing. The fence must be at least four (4) feet in height and exclude livestock. The Office may require the operator to meet additional fencing requirements for the protection of wildlife in particular areas.

Section 16.6. should be amended to read:

Notifications Prior to Commencement of Work – Prior to the construction of roads, locations, ~~and pits, and impoundments~~ for any permitted well work, the operator or his contractor shall notify the appropriate oil and gas inspector and allow the opportunity of inspecting and approving the construction and method of reclamation of all proposed areas to be disturbed in siting, drilling, completing or producing the well. In addition, the well operator or his contractor shall notify in writing the appropriate district oil and gas inspector twenty-four (24) hours before actual permitted well work is commenced. In addition, the operator shall give prior notice to the surface owner before construction of all pits and impoundments.

§35-4-19. Water Supply Testing

19.1. - Testing Obligations and Rights:

General comment:

The operator should be required to test all water wells within 1,000 feet of their proposed well site, as well as any springs within 1,000 feet that are being used for human consumption, domestic animals or other general use where testing has been requested by the surface owner(s)

or user(s).

19.1.a. should be amended to read:

~~At the request of the owners of record of the surface tract as defined in W. Va. Code §22-6-9 or an occupant of land within one thousand (1,000) feet of the proposed well, †~~ The operator shall sample and analyze, in accordance with ~~this section~~ W. Va. Code §22-6-9, water from ~~any all~~ wells located within one thousand (1,000) feet of the proposed oil or gas well ~~or~~ and any springs located within one thousand (1,000) feet of the proposed well that is actually utilized by such owner or occupant for human consumption, domestic animals, or other general use.

19.3. - Sampling and Analysis

General comments:

In addition to the parameters currently required, all water samples should be analyzed for major ions (calcium, magnesium, sodium, potassium, carbonate, sulfate, and chloride), as well as any other constituents of Marcellus flow-back that may serve as indicators of water contamination. DEP data from flow-back samples from a Marcellus well contained high concentrations of several constituents, not just iron and chloride (data attached). However, fracturing, drilling, or even site preparation and road building activities could cause changes in groundwater flowpaths, recharge zones, or the fracture system feeding a water well. A more complete analysis of the constituents of the well water would allow both landowners and operators greater confidence in whether or not the quality of a well changed subsequent to drilling.

At a minimum, sodium concentrations should be measured in all water samples and reported to the landowner. Increases in sodium concentration in water used for human consumption are of great concern. Especially in consideration of the high rates of heart disease and hypertension suffered by West Virginians, increases in sodium concentration in well water used for human consumption could be deadly.

§35-4-21. Construction of Pits and Impoundments with Capacity of Greater Than Five Thousand (5,000) Barrels.

General comments:

DEP should require that drillers at the well site have an emergency plan that includes a list of landowners down gradient and emergency service personnel to contact in the event of any pit or impoundment failure.

Section 21.1. should be amended to read:

All pits and impoundments used in association with an oil and gas operation, whether permitted or not, shall be constructed only in locations appropriate for the storage of water, including wastewater, and shall be designed, constructed, located, maintained, and used in accordance with this rule and in such a manner as to eliminate adverse environmental impacts and to assure safety of the public. Notice of construction of all pits and impoundments shall be provided to the Office

and the surface owner prior to construction. Such notice shall identify the location and dimensions of the pit or impoundment. The Office shall have the authority for inspection of these sites and the enforcement of this rule.

21.6. Inspections

Section 21.6.b. should be amended to read:

All pits and impoundments containing fluid must be inspected every three (3) days for the life of the pit impoundment. Such inspection must be conducted by a company representative experienced in pit and impoundment construction. A company official shall certify to the Office monthly that the inspections have been conducted. If an inspection discloses a potential hazard, the company shall ~~promptly~~ inform the Office of the findings and of the emergency procedures formulated for public protection and remedial action immediately following the inspection, but no later than 24 hours following the inspection.

Section 22 should be added:

§35-4-22. Management of Fracing and Flow-back When Water Used for Fracing is Greater Than Five Thousand (5,000) Barrels.

General comments:

The rule should require disclosure of the chemicals that are placed in the frac water in a place available to the public. The industry already has to supply Material Safety Data Sheets for the chemicals it transports, but they are impossible to find without asking the truck drivers for them, and the truck drivers should not be responsible for that. It is our understanding that the exact chemicals are not trade secrets, just the mixtures. And in any case, trade secrets should yield to the importance of public and environmental safety.

The rule should regulate the chemicals that can be placed in the frac water in addition to requiring their disclosure.

The rule should require testing and disclosure of the flow back water and monitoring and reporting the volume that comes back up. Flow-back water may contain naturally occurring radioactive materials (NORMs) and increased levels of salt. But how much and of what characteristics? How can the agency protect the public without knowing?

The rule should regulate the disposal of the flow back. Fracturing jobs that require the injection of more than 5,000 barrels of fluid should be required to use a closed-loop system to capture the flow back and it should be transported to proper treatment facilities.

Section 22.1. should be added to read:

The contents of any materials used to frac a well shall be reported to the WVDEP and the surface owner prior to commencement of fracing. This information shall also be made available to the public upon request.

Section 22.2. should be added to read:

Flow back water should be tested and monitored for naturally occurring radioactive materials (NORMs).

Section 22.3. should be added to read:

A “closed loop” system shall be required for frac flow-back in such manner that the fluids are captured in holding tanks and transported to a facility approved for the receipt of those wastes.

Sincerely,

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