

**STATE OF WEST VIRGINIA**

**EXECUTIVE DEPARTMENT**

**CHARLESTON**

**EXECUTIVE ORDER NO. 4-11**

**By the Governor**

**WHEREAS**, our great State has been blessed with many forms of natural resources, including coal, oil, natural gas, wind, and thermal energy; and

**WHEREAS**, the production of natural resources and related economic activity contributes significantly to West Virginia's prosperity, generates significant tax revenues for our State and provides thousands of jobs for our citizens; and

**WHEREAS**, this State is and will continue to be one of the leading producers of natural gas in the Appalachian Basin and throughout the nation; and

**WHEREAS**, development of the Marcellus Shale formation over the past several years has become an important component of the natural gas industry in West Virginia and in the Appalachian Basin; and

**WHEREAS**, West Virginia's success in promoting responsible development of natural gas from all formations, including the Marcellus Shale, is not only important for the natural gas industry itself, but is also important for our citizens and the businesses that provide the industry with the supplies, technology, equipment and talent it requires to properly function; and

**WHEREAS**, responsible development of the Marcellus Shale will create thousands of good-paying jobs in West Virginia and has the potential to revitalize our chemical and manufacturing industries, both of which our citizens desperately need; and

**WHEREAS**, West Virginia must approach this tremendous economic opportunity with a prudent, long-term vision and must take the steps necessary to ensure that our State's natural beauty, precious streams and rivers, abundant wildlife and, most importantly, our citizens are protected and afforded an opportunity to thrive both during and after the development of the Marcellus Shale; and

**WHEREAS**, as the technology and techniques utilized to drill and complete wells in the different natural gas bearing formations continue to evolve, it is paramount to the health, safety and well-being of our citizens that these reserves be developed in an environmentally responsible manner; and

**WHEREAS**, West Virginia must take steps to encourage businesses to make the capital investments necessary to ensure the long-term success of our natural gas industry and provide the West Virginia Department of Environmental Protection ("WVDEP") the resources and tools it needs to properly regulate the extraction of hydrocarbons through horizontal drilling; and

**WHEREAS**, the WVDEP has the authority and responsibility, according to W. Va. Code §22-6-1, *et seq.*, to enforce the regulatory provisions of the Code pertaining to, *inter alia*, the exploration and production of oil and natural gas in West Virginia; and

**WHEREAS**, the Legislature recently announced the formation of a select subcommittee to revisit legislation addressing reforms applicable to exploration and production activities in the Marcellus Shale; and

**WHEREAS**, the economic and environmental issues associated with the development of the Marcellus Shale are so significant to the future of West Virginia that they warrant my immediate attention while the Legislature also works to formulate and advance its proposal over the coming months; and

**WHEREAS**, drilling and production activities associated with horizontal natural gas wells completed in the Marcellus Shale involve withdrawals from the waters of this State, use of our public infrastructure and construction of drilling and production-related structures each on a scale that West Virginia regulators have not experienced in the natural gas industry during the last half-century; and

**WHEREAS**, the magnitude of activities surrounding the development of the Marcellus Shale in West Virginia has stretched the resources of the WVDEP and has created considerable concern in areas of our State regarding the proper regulation of this burgeoning industry; and

**WHEREAS**, accidental spills of fluids used in the drilling and completion of wells in the Marcellus Shale, improper construction of drilling and production-related infrastructure and other possible environmental incidents (each a “Potential Environmental Incident”), while rare, can have significant, harmful effects on our citizens, streams and rivers, and wildlife; and

**WHEREAS**, to further the immediate preservation of the public health, safety and welfare and to prevent substantial harm to the public interest that could result from the occurrence of any one particular Potential Environmental Incident, it is necessary to order the WVDEP to take certain immediate actions outlined herein, including the promulgation of emergency rules, to protect the public health, safety and welfare of our citizens; and

**WHEREAS**, the goal of this Executive Order is to encompass horizontal drilling and the development of the Marcellus Shale and other reservoirs that may be developed through unconventional methods; and

**WHEREAS**, in the absence of such immediate actions, the risk to our citizens, however slight, is too great to not act swiftly to promulgate additional regulations to ensure the responsible development of the Marcellus Shale in West Virginia.

**NOW, THEREFORE, I, EARL RAY TOMBLIN**, by virtue of the authority vested in the Governor of the State of West Virginia, do hereby **ORDER** that:

1. The Memorandum dated July 30, 2010 (the “July 30, 2010 Return Fluids Memorandum”) issued by the Office of Oil and Gas within the WVDEP, which advised all GP-WV-1-88 Permittees that, effective as of August 1, 2010, land application of any return fluids from completion activities in the Marcellus Shale formation was prohibited, shall continue in full force and effect and shall not be revoked, rescinded or amended in any way to allow land application of return fluids from well completion activities of any gas well completed in the Marcellus Shale formation until otherwise provided in a subsequent Executive Order or in a subsequent statute or regulation.

2. In addition to the prohibition contained in the July 30, 2010 Return Fluids Memorandum, the WVDEP shall also take steps necessary to prohibit the disposal of return fluids from any gas well completed in the Marcellus Shale into any publicly-owned wastewater treatment plant, unless the WVDEP has approved in writing the discharge of such return fluids into the publicly-owned wastewater treatment plant or plants in question.

3. The WVDEP shall take steps necessary to increase the regulatory oversight of practices and equipment to further ensure that no pollutants are disposed of or discharged into waters of this State in violation of any applicable State or federal water quality standards and effluent limitations.

4. In order to ensure the immediate preservation of the public health, safety and welfare and to prevent substantial harm to the public interest that could result from the occurrence of any one particular Potential Environmental Incident, the WVDEP shall promulgate emergency rules in accordance with W. Va. Code § 29A-3-15:

- a. Requiring that erosion and sediment control plans submitted in conjunction with applications for well work permits involving well sites that disturb three acres or more of surface, excluding pipelines, gathering lines, and roads (the “Surface Disturbance Threshold”), be certified by, and constructed in accordance with plans certified by, a registered professional engineer;
- b. Requiring all applications for well work permits involving well sites that disturb acreage in excess of the Surface Disturbance Threshold be accompanied by a site construction plan certified by, and constructed in accordance with plans certified by, a registered professional engineer and containing such information as the

Secretary of the WVDEP may require;

- c. Requiring all applications for well work permits to estimate the volume of water that will be used in conjunction with drilling, fracturing or stimulating the well for which the permit is sought and, if the drilling, fracturing or stimulating of such well will require water withdrawals from the waters of this State in amounts in excess of 210,000 gallons during any month (the “Water Withdrawal Threshold”), then the applicant shall file a water management plan as part of the application for the well work permit. The water management plan, which may be submitted on either an individual well basis or a watershed basis, shall include the following information:
  - i. The type of water source, such as surface or groundwater, the county in which each water source to be used for water withdrawals is located, and the latitude and longitude of each anticipated withdrawal location;
  - ii. The anticipated volume of each water withdrawal;
  - iii. The anticipated months when water withdrawals will be made;
  - iv. The planned management and disposition of wastewater from fracturing, stimulation, and production activities;
  - v. A listing of the anticipated additives that may be used in water used for fracturing or stimulating the well. Upon well completion, a listing of the additives that were actually used in the fracturing or stimulating of the well shall be submitted as part of the completion report required by W. Va. Code § 22-6-22;
  - vi. For all surface water withdrawals, the water management plan shall include the information required in subdivisions (i) through (v) of this paragraph (4(c)), and the following:
    1. Identification of the current designated and existing water uses, including any public water intakes within one mile downstream of the withdrawal location;
    2. For surface waters, a demonstration, using methods acceptable to the Secretary of the WVDEP, that sufficient in-stream flow will be available immediately downstream of the point of withdrawal.

A sufficient in-stream flow is maintained when a pass-by flow that is protective of the identified use of the stream is preserved immediately downstream of the point of withdrawal; and

3. Methods to be used for surface water withdrawal to minimize significant adverse impact to aquatic life;
- d. Requiring all applications for well work permits involving well sites that disturb acreage in excess of the Surface Disturbance Threshold to include a well-site safety plan to address measures to be employed for the protection of persons on the site, as well as the general public and the environment. The plan shall encompass all aspects of the operation, including the actual well work for which the permit is sought, completion activities, and production activities, and shall provide an emergency point of contact for the well operator. The well operator shall provide a copy of the well site safety plan to the local emergency planning committee established pursuant to W. Va. Code § 15-5A-7 for the emergency planning district in which the well work will occur at least seven days before commencement of well work or site preparation work that involves any disturbance of land;
  - e. Requiring all well work permittees to protect the quantity and the quality of water in surface and groundwater systems both during and after drilling operations and during reclamation by:
    - i. Withdrawing water from surface waters of the State by methods deemed appropriate by the Secretary of the WVDEP so as to maintain sufficient in-stream flow immediately downstream of the withdrawal location;
    - ii. Casing, sealing or otherwise managing wells to keep fluids or natural gas from entering ground and surface waters;
    - iii. Conducting oil and gas operations using best management practices so as to prevent, to the extent practicable, additional contributions of suspended or dissolved solids to streamflow or runoff outside the permit area, but in no event shall the contributions be in excess of requirements set by applicable State or federal law; and

- iv. Registering all water supply wells with the Office of Oil and Gas and constructing and plugging all such wells in accordance with applicable law;
- f. Requiring well operators, as defined in W. Va. Code § 22-6-1, who withdraw more than the Water Withdrawal Threshold from the waters of this State to adhere to the following requirements:
  - i. Within forty-eight hours but no less than twenty-four hours prior to the withdrawal of water, the operator shall identify the location of withdrawal by latitude and longitude, verify, using methods deemed appropriate by the Secretary of the WVDEP, that sufficient flow exists to protect designated uses of the stream and provide notice as prescribed by the Secretary of the WVDEP;
  - ii. All surface water withdrawal locations and facilities identified in the water management plan shall be identified with a sign that discloses that the location is a water withdrawal point and the name and telephone number of the operator for which the water withdrawn will be utilized;
  - iii. For all water used in connection with hydraulic fracturing activities and for all produced water from production activities, well operators shall comply with the following record keeping requirements:
    - 1. For production activities, the following information shall be recorded and retained by the well operator:
      - a. The quantity of flowback water from hydraulic fracturing of the well;
      - b. The quantity of produced water from the well; and
      - c. The method of management or disposal of the flowback and produced water;
    - 2. For transportation activities, the following information shall be recorded and retained by the well operator:
      - a. The quantity of water transported;
      - b. The collection and delivery or disposal locations of water;
      - and

c. The name of the water hauling company; and

g. Requiring applicants for well work permits seeking to drill the first horizontal Marcellus Shale well on any particular well pad located in an area within the boundaries of any municipality, as such term is defined in W. Va. Code § 8-1-2, to publish public notice of the filing of such well work permit application in the form, manner and containing the substance prescribed by the Secretary of the WVDEP, but in any event sufficient to apprise the public of the applicants' intent to drill said well within the municipal boundaries.

5. With respect to development of horizontal wells that exceed the Surface Disturbance Threshold and/or the Water Withdrawal Threshold, the WVDEP shall require all "drill cuttings," and associated "drilling mud," to be disposed of in an approved solid waste facility or managed on site in a manner otherwise approved by the Secretary of the WVDEP.

6. The WVDEP shall evaluate its overall regulatory authority over drilling activities related to horizontal wells that exceed the Surface Disturbance Threshold and/or the Water Withdrawal Threshold and shall identify additional areas of critical regulatory concern, including but not limited to well construction and design standards, air emissions, drill cuttings management, recycling of produced fluids and water management.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Great Seal of the State of West Virginia to be affixed.

DONE at the Capitol, in the City of Charleston, State of West Virginia, this the 12th day of July, in the year of our Lord, Two Thousand Eleven, and in the One Hundred Forty-Ninth year of the State.



By the Governor

*Carl Roy Tomblin*

GOVERNOR

SECRETARY OF STATE

*Natalie E. Egan*

---