Virginia Administrative Code

Agency 25 - DEPARTMENT OF MINES, MINERALS AND ENERGY

Chapter 150 VIRGINIA GAS AND OIL REGULATION

VAC AGENCY NO. 25

DEPARTMENT OF MINES, MINERALS AND ENERGY

AGENCY SUMMARY

The Department of Mines, Minerals and Energy is authorized to promulgate regulations necessary or incidental to the performance of duties or execution of powers conferred under Title 45.1 of the Code of Virginia in the chapters and articles indicated. Such regulations may be promulgated by the department, the Chief of the Division of Mines of the department, the Virginia Gas and Oil Board or the Director of the department, as appropriate, or with the approval of the director, may be promulgated by any division of the department with respect to matters assigned to that division. Code of Virginia, Title 45.1, Chapters 14.1, 14.2, and 22.1.

DIVISION OF MINES

The department, through its Division of Mines, is authorized to prescribe health and safety standards for mining of coal pursuant to the following articles of Chapter 14.2 of Title 45.1 of the Code of Virginia. With regard to regulations governing coal mines, the department uses the Virginia Coal Mine Safety Board as a regulatory work committee. Article 10. The Board of Coal Mining Examiners may require certification by examination of persons who work in coal mines. Article 3. The department is required to license the operation of commercial coal mines. Article 5. It may also operate coal mine rescue and first-aid stations, and train miner crews therefor. The department, upon request, may designate two or more private mine rescue teams as "state-designated mine rescue teams." Articles 6 and 11. The department is required to inspect coal mines (Article 8); investigate explosions, fires and accidents (Article 7); and close coal mines pending noncompliance in certain circumstances (Article 9). Coal mine operators are required to make various filings with the department. Articles 5, 7, 8, and 9.

DIVISION OF MINERAL MINING

The department, through its Division of Mineral Mining, is authorized to prescribe health and safety standards for mining of minerals pursuant to the following articles of Chapter 14.4:1 of Title 45.1 of the Code of Virginia. The department may require certification by examination of persons who work in mineral mines. Article 3. The department is required to license the operation of commercial mineral mines. Article 4. It may operate mineral mine rescue and first-aid stations, and train miner crews therefor. Articles 5 and

9. The department, upon request, may designate two or more mine rescue teams as "state-designated mine rescue teams." Article 5. The department is required to inspect underground mineral mines and is not to inspect surface mineral mines which are determined by the director to be inspected by the federal Mine Safety and Health Administration (Article 7); is required to investigate explosions, fires and accidents (Article 6); and is required to close mineral mines pending noncompliance in certain circumstances (Article 8). The department is directed to require each operator to have a mineral mining safety training program plan. Article 9. Mineral mine operators are required to make various filings with the department. Articles 4, 6, 7, and 8.

The department is also authorized to approve methods and devices, set standards, and impose or modify requirements as to various aspects of mine safety in underground coal mines (Chapter 14.3); surface coal mines (Chapter 14.4); underground mineral mines (Chapter 14.5); and surface mineral mines (Chapter 14.6). These aspects include but are not limited to: mine roof, rib and face control; unsafe conditions; proximity of mining operation to gas and oil wells; mechanical equipment; explosives and blasting; transportation; hoisting equipment; mine openings and escapeways; illumination; miner personal safety; smoking prohibitions; electricity; first aid equipment and personnel; fire prevention and control; ventilation hazards, mine gases and other hazardous conditions; surface areas; ground control; and duties of certified and competent persons. Chapters 14.3, 14.4, 14.5, and 14.6.

The Division of Mineral Mining is also authorized to enforce and administer requirements for reclamation of mineral mines. The division may issue permits, promulgate regulations, administer the Orphaned Mine Land Program, and require or perform reclamation of disturbed areas. Chapter 16. The Division of Mineral Mining also oversees the permitting of uranium exploration. Chapter 21.

DIVISION OF MINED LAND RECLAMATION

The department, through its Division of Mined Land Reclamation, is authorized to enforce and administer the federal Surface Mining Control and Reclamation Act of 1977 (P.L. 95-97). It issues permits for coal surface mining and exploration, makes inspections, issues subpoenas, requires reports and recordkeeping, orders compliance or cessation of activities, and assesses civil penalties. It may make regulations establishing performance standards to carry out the Act. Regulations and subsequent amendments become effective upon approval by the Secretary of the Interior, pending which the former regulations remain in effect. Chapter 19. The department may exercise similar powers respecting surface impacts incident to underground coal mines (Chapter 19), oil and gas wells, gathering pipelines, and

geophysical operations located on areas covered by coal surface mining permits (Chapter 22.1, Article 1). For multiple permit procedures, see the entry for the Department of Environmental Quality in Title 9.

The Department of Mines, Minerals and Energy is also charged with administering an abandoned coal mine reclamation program (Chapter 19) and approving construction of water and silt retaining dams and refuse piles of coal mines (Chapter 18) and mineral mines (Chapter 18.1).

DIVISION OF GAS AND OIL

With respect to oil and gas, the Virginia Gas and Oil Board and the department, through its Division of Gas and Oil, are responsible for administering the statutory provisions directed to prevention of waste in exploration and production, prevention of pollution of state waters, protection of rights of adjacent owners, restoration of disturbed sites, and protection of mining and public safety. Drillers, owners, and operators are required to register with the department, which is authorized to collect fees and issue permits for drilling and various other operations. It may inspect premises and require reports and may order the taking of action to prevent waste. The department may inspect coalbed methane wells and related facility operations to ensure the safety of persons on the permitted sites. Chapter 22.1, Article 3. The board and department may make general and special regulations to carry out the Virginia Gas and Oil Act. Chapter 22.1. The department is required to maintain a record of notifications of refusals to allow operators to sample water wells. Chapter 22.1, Article 4. Gas and oil operations in the Tidewater area must meet additional requirements. § 62.1-195.1 of the Code of Virginia.

The department, through its Division of Gas and Oil, is authorized to administer statutory provisions governing the development of geothermal resources in the Commonwealth. The permitting system provides for exploration and development, while rules and regulations allow for drilling, exploration, and development based on a system of correlative rights. They also establish minimum requirements for temperature, well regulation, reservoir management and allocation of the geothermal resource, and set volumetric rates for leasing, royalties and severance taxes as necessary. The department consults with the State Water Control Board (Department of Environmental Quality) in all respects and with the State Department of Health with respect to potable water in carrying out these duties and responsibilities. Chapter 15.1.

The department operates under the supervision of the Secretary of Commerce and Trade. Regulations are available at the department's principal office located in the Washington Building, 1100

Bank Street, Eighth Floor, Richmond, VA 23219. Regulations of constituent units are also available from the particular unit. Internet address: http://www.dmme.virginia.gov

Rev. 7/2012

CHAPTER 150

VIRGINIA GAS AND OIL REGULATION

Part I

Standards of General Applicability

Article 1

General Information

4VAC25-150-10. Definitions.

The following words and terms when used in this chapter shall have the following meaning unless the context clearly indicates otherwise:

"Act" means the Virginia Gas and Oil Act of 1990, Chapter 22.1 (§ 45.1-361.1 et seq.) of Title 45.1 of the Code of Virginia.

"Adequate channel" means a watercourse that will convey the designated frequency storm event without overtopping its banks or causing erosive damage to the bed, banks and overbank sections.

"Applicant" means any person or business who files an application with the Division of Gas and Oil.

"Approved" means accepted as suitable for its intended purpose when included in a permit issued by the director or determined to be suitable in writing by the director.

"Berm" means a ridge of soil or other material constructed along an active earthen fill to divert runoff away from the unprotected slope of the fill to a stabilized outlet or sediment trapping facility.

"Board" means the Virginia Gas and Oil Board.

"Bridge plug" means an obstruction intentionally placed in a well at a specified depth.

"Cased completion" means a technique used to make a well capable of production in which production casing is set through the productive zones.

"Cased/open hole completion" means a technique used to make a well capable of production in which at least one zone is completed through casing and at least one zone is completed open hole.

"Casing" means all pipe set in wells except conductor pipe and tubing.

"Causeway" means a temporary structural span constructed across a flowing watercourse or wetland to allow construction traffic to access the area without causing erosion damage.

"Cement" means hydraulic cement properly mixed with water.

"Channel" means a natural stream or man-made waterway.

"Chief" means the Chief of the Division of Mines of the Department of Mines, Minerals and Energy.

"Coal-protection string" means a casing designed to protect a coal seam by excluding all fluids, oil, gas or gas pressure from the seam, except such as may be found in the coal seam itself.

"Cofferdam" means a temporary structure in a river, lake or other waterway for keeping the water from an enclosed area that has been pumped dry so that bridge foundations, pipelines, etc., may be constructed.

"Completion" means the process which results in a well being capable of producing gas or oil.

"Conductor pipe" means the short, large diameter string used primarily to control caving and washing out of unconsolidated surface formations.

"Corehole" means any hole drilled solely for the purpose of obtaining rock samples or other information to be used in the exploration for coal, gas, or oil. The term shall not include a borehole used solely for the placement of an explosive charge or other energy source for generating seismic waves.

"Days" means calendar days.

"Denuded area" means land that has been cleared of vegetative cover.

"Department" means the Department of Mines, Minerals and Energy.

"Detention basin" means a stormwater management facility which temporarily impounds and discharges runoff through an outlet to a downstream channel. Infiltration is negligible when compared to the outlet structure discharge rates. The facility is normally dry during periods of no rainfall.

"Dike" means an earthen embankment constructed to confine or control fluids.

"Directional survey" means a well survey that measures the degree of deviation of a hole from true vertical, and the distance and direction of points in the hole from vertical.

"Director" means the Director of the Department of Mines, Minerals and Energy or his authorized agent.

"Diversion" means a channel constructed for the purpose of intercepting surface runoff.

"Diverter" or "diverter system" means an assembly of valves and piping attached to a gas or oil well's casing for controlling flow and pressure from a well.

"Division" means the Division of Gas and Oil of the Department of Mines, Minerals and Energy.

"Erosion and sediment control plan" means a document containing a description of materials and

methods to be used for the conservation of soil and the protection of water resources in or on a unit or group of units of land. It may include appropriate maps, an appropriate soil and water plan inventory and management information with needed interpretations, and a record of decisions contributing to conservation treatment. The plan shall contain a record of all major conservation decisions to ensure that the entire unit or units of land will be so treated to achieve the conservation objectives.

"Expanding cement" means any cement approved by the director which expands during the hardening process, including but not limited to regular oil field cements with the proper additives.

"Firewall" means an earthen dike or fire resistant structure built around a tank or tank battery to contain the oil in the event a tank ruptures or catches fire.

"Flume" means a constructed device lined with erosion-resistant materials intended to convey water on steep grades.

"Flyrock" means any material propelled by a blast that would be actually or potentially hazardous to persons or property.

"Form prescribed by the director" means a form issued by the division, or an equivalent facsimile, for use in meeting the requirements of the Act or this chapter.

"Gas well" means any well which produces or appears capable of producing a ratio of 6,000 cubic feet (6 Mcf) of gas or more to each barrel of oil, on the basis of a gas-oil ratio test.

"Gob well" means a coalbed methane gas well which is capable of producing coalbed methane gas from the de-stressed zone associated with any full-seam extraction of coal that extends above and below the mined-out coal seam.

"Groundwater" means all water under the ground, wholly or partially within or bordering the Commonwealth or within its jurisdiction, which has the potential for being used for domestic, industrial, commercial or agricultural use or otherwise affects the public welfare.

"Highway" means any public street, public alley, or public road.

"Inclination survey" means a survey taken inside a wellbore that measures the degree of deviation of the point of the survey from true vertical.

"Inhabited building" means a building, regularly occupied in whole or in part by human beings, including, but not limited to, a private residence, church, school, store, public building or other structure where people are accustomed to assemble except for a building being used on a temporary basis, on a

permitted site, for gas, oil, or geophysical operations.

"Intermediate string" means a string of casing that prevents caving, shuts off connate water in strata below the water-protection string, and protects strata from exposure to lower zone pressures.

"Live watercourse" means a definite channel with bed and banks within which water flows continuously.

"Mcf" means, when used with reference to natural gas, 1,000 cubic feet of gas at a pressure base of 14.73 pounds per square inch gauge and a temperature base of 60°F.

"Mud" means a mixture of materials that creates a weighted fluid to be circulated downhole during drilling operations for the purpose of lubricating and cooling the bit, removing cuttings, and controlling formation pressures and fluid.

"Natural channel" or "natural stream" means nontidal waterways that are part of the natural topography. They usually maintain a continuous or seasonal flow during the year, and are characterized as being irregular in cross section with a meandering course.

"Nonerodible" means a material such as riprap, concrete or plastic that will not experience surface wear due to natural forces.

"Oil well" means any well which produces or appears capable of producing a ratio of less than 6,000 cubic feet (6 Mcf) of gas to each barrel of oil, on the basis of a gas-oil ratio test.

"Open hole completion" means a technique used to make a well capable of production in which no production casing is set through the productive zones.

"Person" means any individual, corporation, partnership, association, company, business, trust, joint venture or other legal entity.

"Plug" means the sealing of, or a device or material used for the sealing of, a gas or oil wellbore or casing to prevent the migration of water, gas, or oil from one stratum to another.

"Pre-development" means the land use and site conditions that exist at the time that the operations plan is submitted to the division.

"Produced waters" means water or fluids produced from a gas well, oil well, coalbed methane gas well or gob well as a byproduct of producing gas, oil or coalbed methane gas.

"Producer" means a permittee operating a well in Virginia that is producing or is capable of producing gas or oil.

"Production string" means a string of casing or tubing through which the well is completed and may be produced and controlled.

"Red shales" means the undifferentiated shaley portion of the Bluestone formation normally found above the Pride Shale Member of the formation, and extending upward to the base of the Pennsylvanian strata, which red shales are predominantly red and green in color but may occasionally be gray, grayish green and grayish red.

"Red zone" is a zone in or contiguous to a permitted area that could have potential hazards to workers or to the public.

"Retention basin" means a stormwater management facility which, similar to a detention basin, temporarily impounds runoff and discharges its outflow through an outlet to a downstream channel. A retention basin is a permanent impoundment.

"Sediment basin" means a depression formed from the construction of a barrier or dam built to retain sediment and debris.

"Sheet flow," also called overland flow, means shallow, unconcentrated and irregular flow down a slope. The length of strip for sheet flow usually does not exceed 200 feet under natural conditions.

"Slope drain" means tubing or conduit made of nonerosive material extending from the top to the bottom of a cut or fill slope.

"Special diligence" means the activity and skill exercised by a good businessperson in a particular specialty, which must be commensurate with the duty to be performed and the individual circumstances of the case; not merely the diligence of an ordinary person or nonspecialist.

"Stabilized" means able to withstand normal exposure to air and water flows without incurring erosion damage.

"Stemming" means the inert material placed in a borehole after an explosive charge for the purpose of confining the explosion gases in the borehole or the inert material used to separate the explosive charges (decks) in decked holes.

"Storm sewer inlet" means any structure through which stormwater is introduced into an underground conveyance system.

"Stormwater management facility" means a device that controls stormwater runoff and changes the characteristics of that runoff, including but not limited to, the quantity, quality, the period of release or the

velocity of flow.

"String of pipe" or "string" means the total footage of pipe of uniform size set in a well. The term embraces conductor pipe, casing and tubing. When the casing consists of segments of different size, each segment constitutes a separate string. A string may serve more than one purpose.

"Sulfide stress cracking" means embrittlement of the steel grain structure to reduce ductility and cause extreme brittleness or cracking by hydrogen sulfide.

"Surface mine" means an area containing an open pit excavation, surface operations incident to an underground mine, or associated activities adjacent to the excavation or surface operations, from which coal or other minerals are produced for sale, exchange, or commercial use; and includes all buildings and equipment above the surface of the ground used in connection with such mining.

"Target formation" means the geologic gas or oil formation identified by the well operator in his application for a gas, oil or geophysical drilling permit.

"Temporary stream crossing" means a temporary span installed across a flowing watercourse for use by construction traffic. Structures may include bridges, round pipes or pipe arches constructed on or through nonerodible material.

"Ten-year storm" means a storm that is capable of producing rainfall expected to be equaled or exceeded on the average of once in 10 years. It may also be expressed as an exceedance probability with a 10% chance of being equaled or exceeded in any given year.

"Tubing" means the small diameter string set after the well has been drilled from the surface to the total depth and through which the gas or oil or other substance is produced or injected.

"Two-year storm" means a storm that is capable of producing rainfall expected to be equaled or exceeded on the average of once in two years. It may also be expressed as an exceedance probability with a 50% chance of being equaled or exceeded in any given year.

"Vertical ventilation hole" means any hole drilled from the surface to the coal seam used only for the safety purpose of removing gas from the underlying coal seam and the adjacent strata, thus, removing the gas that would normally be in the mine ventilation system.

"Water bar" means a small obstruction constructed across the surface of a road, pipeline right-of-way, or other area of ground disturbance in order to interrupt and divert the flow of water on a grade for the purpose of controlling erosion and sediment migration.

"Water-protection string" means a string of casing designed to protect groundwater-bearing strata.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.1, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-20. Basis and authority.

This chapter implements the Virginia Gas and Oil Act, Chapter 22.1 (§ 45.1-361.1 et seq.) of Title 45.1 of the Code of Virginia. The Director of the Department of Mines, Minerals and Energy is authorized to promulgate this chapter pursuant to §§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.2, eff. September 25, 1991.

4VAC25-150-30. Other laws and regulations.

Nothing in this chapter shall relieve a permittee of the duty to comply with other laws and regulations.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.3, eff. September 25, 1991.

4VAC25-150-40. Registration.

A. Persons required to register under § 45.1-361.37 of the Code of Virginia shall register with the division on a registration form prescribed by the director.

B. Registered persons shall notify the division within 30 days of any change in the information included on the registration form filed in accordance with subsection A of this section.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.4, eff. September 25, 1991.

4VAC25-150-50. Gas or oil in holes not permitted as a gas or oil well.

In the event any person captures and uses gas or oil and does not permit the shaft or hole as a gas or oil well as provided for in this chapter, the director shall take appropriate enforcement action.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.5, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998.

4VAC25-150-60. Due dates for reports and decisions.

A. Where the last day fixed for submitting a request for a hearing or any required report falls on a Saturday, Sunday, or any day on which the Division of Gas and Oil office is closed as authorized by the Code of Virginia or the Governor, the required action may be done on the next day that the office is open.

B. All submittals to or notifications of the Division of Gas and Oil identified in subsection A of this section shall be made to the division office no later than 5 p.m. on the day required by the Act or by this chapter.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.6, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-70. [Repealed]

Historical Notes

Derived from VR480-05-22.1 § 1.7, eff. September 25, 1991; repealed, Virginia Register Volume 15, Issue 2, eff. November 11, 1998.

Article 2

Permitting

4VAC25-150-80. Application for a permit.

A. Applicability.

1. Persons required in § 45.1-361.29 of the Code of Virginia to obtain a permit or permit modification shall apply to the division on the forms prescribed by the director. All lands on which gas, oil or geophysical operations are to be conducted shall be included in a permit application.

2. In addition to specific requirements for variances in other sections of this chapter, any applicant for a variance shall, in writing, document the need for the variance and describe the alternate measures or practices to be used.

B. The application for a permit shall, as applicable, be accompanied by the fee in accordance with § 45.1-361.29 of the Code of Virginia, the bond in accordance with § 45.1-361.31 of the Code of Virginia, and the fee for the Orphaned Well Fund in accordance with § 45.1-361.40 of the Code of Virginia.

C. Each application for a permit shall include information on all activities, including those involving associated facilities, to be conducted on the permitted site. This shall include the following:

1. The name and address of:

a. The gas, oil or geophysical applicant;

b. The agent required to be designated under § 45.1-361.37 of the Code of Virginia; and

c. Each person whom the applicant must notify under § 45.1-361.30 of the Code of Virginia;

2. The certifications required in § 45.1-361.29 E of the Code of Virginia;

3. The proof of notice to affected parties required in § 45.1-361.29 E of the Code of Virginia, which shall be:

a. A copy of a signed receipt or electronic return receipt of delivery of notice by certified mail;

b. A copy of a signed receipt acknowledging delivery of notice by hand; or

c. If all copies of receipt of delivery of notice by certified mail have not been signed and returned within 15 days of mailing, a copy of the mailing log or other proof of the date the notice was sent by certified mail, return receipt requested;

4. If the application is for a permit modification, proof of notice to affected parties, as specified in subdivision C 3 of this section;

5. Identification of the type of well or other gas, oil or geophysical operation being proposed;

6. The plat in accordance with 4VAC25-150-90;

7. The operations plan in accordance with 4VAC25-150-100;

8. The information required for operations involving hydrogen sulfide in accordance with 4VAC25-150-350;

9. The location where the Spill Prevention Control and Countermeasure (SPCC) plan is available, if one is required;

10. The Department of Mines, Minerals and Energy, Division of Mined Land Reclamation's permit number for any area included in a Division of Mined Land Reclamation permit on which a proposed gas, oil or geophysical operation is to be located;

11. For an application for a conventional well, the information required in 4VAC25-150-500;

12. For an application for a coalbed methane gas well, the information required in 4VAC25-150-560;

13. For an application for a geophysical operation, the information required in 4VAC25-150-670; and

14. For an application for a permit to drill for gas or oil in Tidewater Virginia, the environmental impact assessment meeting the requirements of § 62.1-195.1 B of the Code of Virginia.

D. After July 1, 2009, all permit applications and plats submitted to the division shall be in electronic form or a format prescribed by the director.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.8, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-90. Plats.

A. When filing an application for a permit for a well or corehole, the applicant also shall file an accurate plat certified by a licensed professional engineer or licensed land surveyor on a scale, to be stated thereon, of 1 inch equals 400 feet (1:4800). The scope of the plat shall be large enough to show the board approved unit and all areas within the greater of 750 feet or one half of the distance specified in § 45.1-361.17 of the Code of Virginia from the proposed well or corehole. The plat shall be submitted on a form prescribed by the director.

B. The known courses and distances of all property lines and lines connecting the permanent points, landmarks or corners within the scope of the plat shall be shown thereon. All lines actually surveyed shall be shown as solid lines. Lines taken from deed or chain of title descriptions only shall be shown by broken lines. All property lines shown on a plat shall agree with any one of the following: surveys, deed descriptions, or acreages used in county records for tax assessment purposes.

C. A north and south line shall be given and shown on the plat, and point to the top of the plat.

D. Wells or coreholes shall be located on the plat as follows:

1. The proposed or actual surface elevation of the subject well or corehole shall be shown on the plat, within an accuracy of one vertical foot. The surface elevation shall be tied to either a government benchmark or other point of proven elevation by differential or aerial survey, by trigonometric leveling, or by global positioning system (GPS) survey. The location of the government benchmark or the point of proven elevation and the method used to determine the surface elevation of the subject well or corehole shall be noted and described on the plat.

2. The proposed or actual horizontal location of the subject well or corehole determined by survey shall be shown on the plat. The proposed or actual well or corehole location shall be shown in accordance with the Virginia Coordinate System of 1983, as defined in Chapter 17 (§ 55-287 et seq.) of Title 55 of the Code of Virginia, also known as the State Plane Coordinate System.

3. The courses and distances of the well or corehole location from two permanent points or landmarks on the tract shall be shown; such landmarks shall be set stones, iron pipes, T-rails or other manufactured monuments, including mine coordinate monuments, and operating or abandoned wells which are platted to the accuracy standards of this section and on file with the

division. If temporary points are to be used to locate the actual well or corehole location as provided for in 4VAC25-150-290, the courses and distances of the well or corehole location from the two temporary points shall be shown.

4. Any other well, permitted or drilled, within the distance specified in § 45.1-361.17 of the Code of Virginia or the distance to the nearest well completed in the same pool, whichever is less, or within the boundaries of a drilling unit established by the board around the subject well shall be shown on the plat or located by notation. The type of each well shall be designated by the following symbols as described in the Federal Geographic Data Committee (FGDC) Digital Cartographic Standard for Geologic Map Symbolization:

OPERATION TYPE	SYMBOL	FGDC REF. NO.
CBM		
Active		19.5.57
Plugged/Abandoned		19.5.59
Conventional		
Active		19.5.54
Plugged/Abandoned		19.5.56
Oil		
Active		19.5.40
Plugged/Abandoned		19.5.42
Pipeline		
Aboveground		30.3.24
Underground		30.3.23
Other		
Proposed Well		19.5.10
Horizontal Well		19.5.14
Waste Disposal Well		19.5.26
Gas Storage Well		19.5.92
Facility		30.3.15

Symbols for additional features as required in 4VAC25-150-510, 4VAC25-150-590, and 4VAC25-150-680 should be taken from the FDGC standard where applicable.

E. Plats shall also contain:

1. For a conventional gas and oil or injection well, the information required in 4VAC25-150-510;

2. For a coalbed methane gas well, the information required in 4VAC25-150-590; or

3. For a corehole, the information required in 4VAC25-150-680.

F. Any subsequent application for a new permit or permit modification shall include an accurate copy of the well plat, updated as necessary to reflect any changes on the site, newly discovered data or additional data required since the last plat was submitted. Any revised plat shall be certified as required in subsection A of this section.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.9, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Errata, 15:6 VA.R. 938 December 7, 1998; amended, Virginia Register Volume 24, Issue 17, eff. June 12, 2008; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-100. Operations plans.

A. Each application for a permit or permit modification shall include an operations plan, in a format approved by or on a form prescribed by the director. The operations plan and accompanying maps or drawings shall become part of the terms and conditions of any permit which is issued.

B. The applicant shall indicate how risks to the public safety or to the site and adjacent lands are to be managed, consistent with the requirements of § 45.1-361.27 B of the Code of Virginia, and shall provide a short narrative, if pertinent. The operations plan shall identify red zone areas.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.10, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-110. Permit supplements and permit modifications.

A. Permit supplements.

1. Standard permit supplements. A permittee shall be allowed to submit a permit supplement when work being performed:

a. Does not change the disturbance area as described in the original permit; and

b. Involves activities previously permitted.

The permittee shall submit written documentation of the changes made to the permitted area no later than 30 days after completing the change. All other changes to the permit shall require a permit modification in accordance with § 45.1-361.29 of the Code of Virginia.

2. Emergency permit supplements. If a change must be implemented immediately for an area off the disturbance area as described in the original permit, or for an activity not previously permitted due to actual or threatened imminent danger to the public safety or to the environment, the permittee shall:

a. Take immediate action to minimize the danger to the public or to the environment;

b. Notify the director as soon as possible of actions taken to minimize the danger and, if the director determines an emergency still exists and grants oral approval, commence additional changes if necessary; and

c. Submit a supplement to the permit within seven working days of notifying the director with a written description of the emergency and action taken. An incident report may also be required as provided for in 4VAC25-150-380.

Any changes to the permit are to be temporary and restricted to those that are absolutely necessary to minimize danger. Any permanent changes to the permit shall require a permit modification as provided for in subsection B of this section.

B. Permit modifications.

1. Applicability. All changes to the permit which do not fit the description contained in subsection A of this section shall require a permit modification in accordance with § 45.1-361.29 of the Code of Virginia.

2. Notice and fees. Notice of a permit modification shall be given in accordance with § 45.1-361.30 of the Code of Virginia. The application for a permit modification shall be accompanied, as applicable, by the fee in accordance with § 45.1-361.29 of the Code of Virginia and the bond in accordance with § 45.1-361.31 of the Code of Virginia.

3. Waiver of right to object. Upon receipt of notice, any person may, on a form approved by the director, waive the time requirements and their right to object to a proposed permit modification. The department shall be entitled to rely upon the waiver to approve the permit modification.

4. Permit modification. The permittee shall submit a written application for a permit modification on a form prescribed by the director. The permittee may not undertake the proposed work until the permit modification has been issued. As appropriate, the application shall include, but not be limited to:

a. The name and address of:

(1) The permittee; and

(2) Each person whom the applicant must notify under § 45.1-361.30 of the Code of Virginia;

b. The certifications required in § 45.1-361.29 E of the Code of Virginia;

c. The proof of notice required in § 45.1-361.29 E of the Code of Virginia, as provided for in 4VAC25-150-80 C 3;

d. Identification of the type of work for which a permit modification is requested;

e. The plat in accordance with 4VAC25-150-90;

f. All data, maps, plats and plans in accordance with 4VAC25-150-100 necessary to describe the activity proposed to be undertaken;

g. When the permit modification includes abandoning a gas or oil well as a water well, a description of the plugging to be completed up to the water-bearing formation and a copy of the permit issued for the water well by the Virginia Department of Health;

h. The information required for operations involving hydrogen sulfide in accordance with 4VAC25-150-350 if applicable to the proposed operations;

i. The location where the Spill Prevention Control and Countermeasure (SPCC) plan is available, if one has been developed for the site of the proposed operations;

j. The Department of Mines, Minerals and Energy, Division of Mined Land Reclamation's permit number for any area included in a Division of Mined Land Reclamation permit; and

k. The information, as appropriate, required in 4VAC25-150-500, 4VAC25-150-560, 4VAC25-150-670, or 4VAC25-150-720.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.11, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-120. Transfer of permit rights.

A. Applicability.

1. No transfer of rights granted by a permit shall be made without prior approval from the director.

2. Any approval granted by the director of a transfer of permit rights shall be conditioned upon the proposed new operator complying with all requirements of the Act, this chapter and the permit.

B. Application. Any person requesting a transfer of rights granted by a permit shall submit a written application on a form prescribed by the director. The application shall be accompanied by a fee of $75 and bond, in the name of the person requesting the transfer, in accordance with § 45.1-361.31 of the Code of Virginia. The application shall contain, but is not limited to:

1. The name and address of the current permittee, the current permit number and the name of the current operation;

2. The name and address of the proposed new operator and the proposed new operations name;

3. Documentation of approval of the transfer by the current permittee;

4. If the permit was issued on or before September 25, 1991, an updated operations plan, in accordance with 4VAC25-150-100, showing how all permitted activities to be conducted by the proposed new permittee will comply with the standards of this chapter;

5. If the permit was issued on or before September 25, 1991, for a well, a plat meeting the requirements of 4VAC25-150-90 updated to reflect any changes on the site, newly discovered data or additional data required since the last plat was submitted, including the change in ownership of the well; and

6. If the permit was issued on or before September 25, 1991, if applicable, the docket number and date of recordation of any order issued by the board for a pooled unit, pertaining to the current permit.

C. Standards for approval. The director shall approve the transfer of permit rights when the proposed new permittee:

1. Has registered with the department in accordance with § 45.1-361.37 of the Code of Virginia;

2. Has posted acceptable bond in accordance with § 45.1-361.31 of the Code of Virginia; and

3. Has no outstanding debt pursuant to § 45.1-361.32 of the Code of Virginia.

D. The new permittee shall be responsible for any violations of or penalties under the Act, this chapter, or conditions of the permit after the director has approved the transfer of permit rights.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.12, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 19, Issue 18, eff. July 1, 2003; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-130. Notice of permit applications and modifications.

A. Gas, oil or geophysical operators shall provide notice of an application for a permit or permit modification in accordance with § 45.1-361.30 of the Code of Virginia, as identified on the "Technical Data Sheet for Permit Applications Under § 45.1-361.29," prescribed by the director.

B. If notice required under § 45.1-361.30 of the Code of Virginia has been sent by certified mail, return receipt requested, and the notice has not been delivered within 15 days of mailing the notice, the director shall consider notice to be given as of the end of the 15-day period and the objection period specified in § 45.1-361.35 shall commence.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.13, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998.

4VAC25-150-135. Waiver of right to object to permit applications.

Upon receipt of notice, any person may, on a form approved by the director, waive the time requirements and their right to object to a proposed permit application. The director shall be entitled to rely upon the waiver to approve the permit application.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from Virginia Register Volume 15, Issue 2, eff. November 11, 1998; amended, Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-140. Objections to permit applications.

A. Objections shall be filed in writing, at the office of the division, in accordance with § 45.1-361.35 of the Code of Virginia. The director shall notify affected parties of an objection as soon as practicable.

B. If after the director has considered notice to be given under 4VAC25-150-130 B of this chapter, a person submits an objection with proof of receipt of actual notice within 15 days prior to submitting the objection, then the director shall treat the objection as timely.

C. Objections to an application for a new or modified permit shall contain:

1. The name of the person objecting to the permit;

2. The date the person objecting to the permit received notice of the permit application;

3. Identification of the proposed activity being objected to;

4. A statement of the specific reason for the objection;

5. A request for a stay to the permit, if any, together with justification for granting a stay; and

6. Any other information the person objecting to the permit wishes to provide.

D. When deciding to convene a hearing pursuant to § 45.1-361.35 of the Code of Virginia, the director shall consider the following:

1. Whether the person objecting to the permit has standing to object as provided in § 45.1-361.30 of the Code of Virginia;

2. Whether the objection is timely; and

3. Whether the objection meets the applicable standards for objections as provided in § 45.1-361.35 of the Code of Virginia.

E. If the director decides not to hear the objection, then he shall notify the person who objects and the permit applicant in writing, indicating his reasons for not hearing the objection, and shall advise the objecting person of his right to appeal the decision.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.14, eff. September 25, 1991; amended Virginia Register Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-150. Hearing and decision on objections to permit applications.

A. In any hearing on objections to a permit application:

1. The hearing shall be an informal fact finding hearing in accordance with the Administrative Process Act, § 2.2-4019 of the Code of Virginia.

2. The permit applicant and any person with standing in accordance with § 45.1-361.30 of the Code of Virginia may be heard.

3. Any valid issue in accordance with § 45.1-361.35 of the Code of Virginia may be raised at the hearing. The director shall determine the validity of objections raised during the hearing.

B. The director shall, as soon after the hearing as practicable, issue his decision in writing and hand deliver or send the decision by certified mail to all parties to the hearing. The decision shall include:

1. The subject, date, time and location of the hearing;

2. The names of the persons objecting to the permit;

3. A summary of issues and objections raised at the hearing;

4. Findings of fact and conclusions of law;

5. The text of the decision, including any voluntary agreement; and

6. Appeal rights.

C. Should the director deny the permit issuance and allow the objection, a written notice of the decision shall be sent to any person receiving notice of the application.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.15, eff. September 25, 1991; amended, Virginia Register Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-160. Approval of permits and permit modifications.

A. Permits, permit modifications, permit renewals, and transfer of permit rights shall be granted in writing by the director.

B. The director may not issue a permit, permit renewal, or permit modification prior to the end of the time period for filing objections pursuant to § 45.1-361.35 of the Code of Virginia unless, upon receipt of notice, any person may, on a form approved by the director, waive the time requirements and their right to object to a proposed permit application or permit modification application. The director shall be entitled to rely upon the waiver to approve the permit application or permit modification.

C. The director may not issue a permit to drill for gas or oil in Tidewater Virginia until he has considered the findings and recommendations of the Department of Environmental Quality, as provided for in § 62.1-195.1 of the Code of Virginia and, where appropriate, has required changes in the permitted activity based on the Department of Environmental Quality's recommendations.

D. The provisions of any order of the Virginia Gas and Oil Board that govern a gas or oil well permitted by the director shall become conditions of the permit.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.16, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

Article 3

Enforcement

4VAC25-150-170. Enforcement.

A. The director shall enforce the provisions of the Act, this chapter, 4VAC25 Chapter 160 (4VAC25-160-10 et seq.) entitled "The Virginia Gas and Oil Board Regulation," any board order, or any condition of a permit, and may use the following methods:

1. Obtaining voluntary compliance through conference, warning or other means prior to issuing any enforcement notice or order;

2. Issuing notices of violation in accordance with 4VAC25-150-180;

3. Issuing closure orders in accordance with 4VAC25-150-190;

4. Issuing show cause orders in accordance with 4VAC25-150-200;

5. Issuing emergency orders in accordance with § 45.1-361.27 D of the Code of Virginia; or

6. Any other action in accordance with the Code of Virginia.

B. The purpose of taking actions under this section is to obtain compliance with the provisions of the Act, this chapter, 4VAC25 Chapter 160 (4VAC25-160-10 et seq.) entitled "The Virginia Gas and Oil Board Regulation," any board order, or conditions of a permit.

C. Reclamation operations and other activities intended to protect the public health and safety and the environment shall continue during the period of any notice or order unless otherwise provided in the notice or order.

D. Any person found to be conducting a gas, oil or geophysical operation without a permit from the director shall be subject to enforcement for operating without a permit and for not meeting any other standards of the Act or this chapter which would be required if the person was operating under a permit.

E. Decisions of the director may be appealed to the Virginia Gas and Oil Board pursuant to § 45.1-361.23 of the Code of Virginia.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.17, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998.

4VAC25-150-180. Notices of violation.

A. The director may issue a notice of violation if he finds a violation of any of the following:

1. Chapter 22.1 (§ 45.1-361.1 et seq.) of Title 45.1 of the Code of Virginia;

2. This chapter;

3. 4VAC25-160 entitled "Virginia Gas and Oil Board Regulation";

4. Any board order; or

5. Any condition of a permit, which does not create an imminent danger or harm for which a closure order must be issued under 4VAC5-150-190.

B. A notice of violation shall be in writing, signed, and set forth with reasonable specificity:

1. The nature of the violation, including a reference to the section or sections of the Act, applicable regulation, order or permit condition which has been violated;

2. A reasonable description of the portion of the operation to which the violation applies, including an explanation of the condition or circumstance that caused the portion of the operation to be in violation, if it is not self-evident in the type of violation itself;

3. The remedial action required, which may include interim steps; and

4. A reasonable deadline for abatement, which may include a deadline for accomplishment of interim steps.

C. The director may extend the deadline for abatement or for accomplishment of an interim step, if the failure to meet the deadline previously set was not caused by the permittee's lack of diligence. An extension of the deadline for abatement may not be granted when the permittee's failure to abate has been caused by a lack of diligence or intentional delay by the permittee in completing the remedial action required.

D. If the permittee fails to meet the deadline for abatement or for completion of any interim steps, the director shall issue a closure order under 4VAC25-150-190.

E. The director shall terminate a notice of violation by written notice to the permittee when he determines that all violations listed in the notice of violation have been abated.

F. A permittee issued a notice of violation may request, in writing to the director, an informal fact-

finding hearing to review the issuance of the notice. This written request shall be made within 10 days of receipt of the notice. The permittee may request, in writing to the director, an expedited hearing.

G. A permittee is not relieved of the duty to abate any violation under a notice of violation during an appeal of the notice. A permittee may apply for an extension of the deadline for abatement during an appeal of the notice.

H. The director shall issue a decision on any request for an extension of the deadline for abatement under a notice of violation within five days of receipt of such request. The director shall conduct an informal fact-finding hearing, in accordance with the Administrative Process Act, § 2.2-4019 of the Code of Virginia, no later than 10 days after receipt of the hearing request.

I. The director shall affirm, modify, or vacate the notice in writing to the permittee within five days of the date of the hearing.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.18, eff. September 25, 1991; amended, Virginia Register 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-190. Closure orders.

A. The director shall immediately order a cessation of operations or of the relevant portion thereof, when he finds any condition or practice which:

1. Creates or can be reasonably expected to create an imminent danger to the health or safety of the public, including miners; or

2. Causes or can reasonably be expected to cause significant, imminent, environmental harm to land, air or water resources.

B. The director may order a cessation of operations or of the relevant portion thereof, when:

1. A permittee fails to meet the deadline for abatement or for completion of any interim step under a notice of violation;

2. Repeated notices of violations have been issued for the same condition or practice; or

3. Gas, oil or geophysical operations are being conducted by any person without a valid permit from the Division of Gas and Oil.

C. A closure order shall be in writing, signed and shall set forth with reasonable specificity:

1. The nature of the condition, practice or violation;

2. A reasonable description of the portion of the operation to which the closure order applies;

3. The remedial action required, if any, which may include interim steps; and

4. A reasonable deadline for abatement, which may include deadline for accomplishment of interim steps.

D. A closure order shall require the person subject to the order to take all steps the director deems necessary to abate the violations covered by the order in the most expeditious manner physically possible.

E. If a permittee fails to abate a condition or practice or complete any interim step as required in a closure order, the director shall issue a show cause order under 4VAC25-150-200.

F. The director shall terminate a closure order by written notice to the person subject to the order when he determines that all conditions, practices or violations listed in the order have been abated.

G. A person issued a closure order may request, in writing to the director, an informal fact-finding

hearing to review the issuance of the order within 10 days of receipt of the order. The person may request, in writing to the director, an expedited hearing within three days of receipt of the order.

H. A person is not relieved of the duty to abate any condition under, or comply with, any requirement of a closure order during an appeal of the order.

I. The director shall conduct an informal fact-finding hearing, in accordance with the Administrative Process Act, § 2.2-4019 of the Code of Virginia, no later than 15 days after the order was issued, or in the case of an expedited hearing, no later than five days after the order was issued.

J. The director shall affirm, modify, or vacate the closure order in writing to the person the order was issued to no later than five days after the date of the hearing.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.19, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-200. Show cause orders.

A. The director may issue a show cause order to a permittee requiring justification for why his permit should not be suspended or revoked whenever:

1. A permittee fails to abate a condition or practice or complete any interim step as required in a closure order;

2. A permittee fails to comply with the provisions of 4VAC25-160 entitled "Virginia Gas and Oil Board Regulation"; or

3. A permittee fails to comply with the provisions of an order issued by the Virginia Gas and Oil Board.

B. A show cause order shall be in writing, signed, and set forth with reasonable specificity:

1. The permit number of the operation subject to suspension or revocation; and

2. The reason for the show cause order.

C. The permittee shall have five days from receipt of the show cause order to request in writing an informal fact-finding hearing.

D. The director shall conduct an informal fact-finding hearing, in accordance with the Administrative Process Act, § 2.2-4019 of the Code of Virginia, no later than five days after receipt of the request for the hearing.

E. The director shall issue a written decision within five days of the date of the hearing.

F. If the permit is revoked, the permittee shall immediately cease operations on the permit area and complete reclamation within the deadline specified in the order.

G. If the permit is suspended, the permittee shall immediately commence cessation of operations on the permit area and complete all actions to abate all conditions, practices or violations, as specified in the order.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.20, eff. September 25, 1991; amended, Virginia Register Volume 15,

Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

Article 4

Reporting

4VAC25-150-210. Monthly reports.

A. Each producer shall submit a monthly report, on a form prescribed by the director or in a format approved by the director to the division no later than 90 days after the last day of each month.

B. Reports of gas production.

1. Every producer of gas shall report in Mcf the amount of production from each well.

2. Reports shall be summarized by county or city.

3. Reports shall provide the date of any new connection of a well to a gathering pipeline or other marketing system.

C. Reports of oil production.

1. Every producer of oil shall report in barrels the amount of oil production, oil on hand and oil delivered from each well.

2. Reports shall be summarized by county or city.

3. Reports shall provide the date of any new connection of a well to a gathering pipeline or other marketing system.

D. Reports of shut-in wells. If a well is shut-in or otherwise not produced during any month, it shall be so noted on the monthly report.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.21, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-220. Annual reports.

A. Each permittee shall submit a calendar-year annual report to the division by no later than March 31 of the next year.

B. The annual report shall include as appropriate:

1. A confirmation of the accuracy of the permittee's current registration filed with the division or a report of any change in the information;

2. The name, address and phone number or numbers of the persons to be contacted at any time in case of an emergency;

3. Production of gas or oil on a well-by-well and county-by-county or city-by-city basis for each permit or as prescribed by the director and the average price received for each Mcf of gas and barrel of oil;

4. Certification by the permittee that the permittee has paid all severance taxes for each permit;

5. When required, payment to the Gas and Oil Plugging and Restoration Fund as required in § 45.1-361.32 of the Code of Virginia; and

6. Certification by the permittee that bonds on file with the director have not been changed.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.22, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

Article 5

Technical Standards

4VAC25-150-230. Commencement of activity.

A. Gas, oil or geophysical activity commences with ground-disturbing activity.

B. A permittee shall notify the division at least 48 hours prior to commencing ground-disturbing activity, drilling a well or corehole, completing or recompleting a well or plugging a well or corehole. The permittee shall notify the division, either orally or in writing, of the operation name and the date and time that the work is scheduled to commence. Should activities not commence as first noticed, the permittee shall make every effort to update the division and reschedule the commencement of activity, indicating the specific date and time the work will be commenced.

C. For dry holes and in emergency situations, the operator shall notify the division, orally or in writing, within 48 hours of commencing plugging activities.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.23, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-240. Signs.

A. Temporary signs. Each permittee shall keep a sign posted at the point where the access road enters the permitted area of each well or corehole being drilled or tested, showing the name of the well or corehole permittee, the well name and the permit number, the telephone number for the Division of Gas and Oil and a telephone number to use in case of an emergency or for reporting problems.

The sign shall be posted from the commencement of construction until:

1. The well is completed;

2. The dry hole or corehole is plugged;

3. The site is stabilized; or

4. The permanent sign is posted.

B. Permanent signs. Each permittee shall keep a permanent sign posted in a conspicuous place on or near every producing well or well capable of being placed into production and on every associated facility. For any well drilled or sign replaced after September 25, 1991, the sign shall:

1. Be a minimum of 18 inches by 14 inches in size;

2. Contain, at a minimum, the permittee's name, the well name and the permit number, the Division of Gas and Oil phone number and the telephone number to use in case of an emergency or for reporting problems;

3. Contain lettering a minimum of 1-1/4 inches high; and

4. For a well, be located on the well or on a structure such as a meter house or pole located within 50 feet of the well head.

C. Signs designating red zone areas within the permit boundary are to be maintained in good order, include reflective material or be lighted so to be visible at night, and located as prescribed by the operator's red zone safety plan internal to the operations plan.

D. All signs shall be maintained or replaced as necessary to be kept in a legible condition.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.24, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-250. Blasting and explosives.

A. Applicability. This section governs all blasting on gas, oil or geophysical sites, except for:

1. Blasting being conducted as part of seismic exploration where explosives are placed and shot in a borehole to generate seismic waves; or

2. Use of a device containing explosives for perforating a well.

B. Certification.

1. All blasting on gas, oil and geophysical sites shall be conducted by a person who is certified by the department, the Board of Coal Mining Examiners, or by the Virginia Department of Housing and Community Development.

2. The director may accept a certificate issued by another state in lieu of the certification required in subdivision B 1 of this section, provided the department, the Board of Coal Mining Examiners, or the Department of Housing and Community Development has approved reciprocity with that state.

C. Blasting safety. Blasting shall be conducted in a manner as prescribed by 4VAC25-110, Regulations Governing Blasting in Surface Mining Operations, designed to prevent injury to persons, and damage to features described in the operations plan under 4VAC25-150-100 B.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.25, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-260. Erosion, sediment control and reclamation.

A. Applicability. Permittees shall meet the erosion and sediment control standards of this section whenever there is a ground disturbance for a gas, oil or geophysical operation. Permittees shall reclaim the land to the standards of this section after the ground-disturbing activities are complete and the land will not be used for further permitted activities.

B. Erosion and sediment control plan. Applicants for a permit shall submit an erosion and sediment control plan as part of their operations plan. The plan shall describe how erosion and sedimentation will be controlled and how reclamation will be achieved.

C. Erosion and sediment control standards. Whenever ground is disturbed for a gas, oil or geophysical operation, the following erosion and sediment control standards shall be met.

1. All trees, shrubs and other vegetation shall be cleared as necessary before any blasting, drilling, or other site construction, including road construction, begins.

a. Cleared vegetation shall be either removed from the site, properly stacked on the permitted site for later use, burned, or placed in a brush barrier if needed to control erosion and sediment control. Only that material necessary for the construction of the permitted site shall be cleared. When used as a brush barrier, the cleared vegetation shall be cut and windrowed below a disturbed area so that the brush barrier will effectively control sediment migration from the disturbed area. The material shall be placed in a compact and uniform manner within the brush barrier and not perpendicular to the brush barrier. Brush barriers shall be constructed so that any concentrated flow created by the barrier is released into adequately protected outlets and adequate channels. Large diameter trunks, limbs, and stumps that may render the brush barrier ineffective for sediment control shall not be placed in the brush barrier.

b. During construction, soil sufficient to provide a suitable growth medium for permanent stabilization with vegetation shall be used to stabilize the site in accordance with the standards of subdivisions C 2 and C 3 of this section.

2. Except as provided for in subdivisions C 5 and C 12 c of this section, permanent or temporary stabilization measures shall be applied to denuded areas within 30 days of achievement of final grade on the site unless the area will be redisturbed within 30 days.

a. If no activity occurs on a site for a period of 30 consecutive days then stabilization measures shall be applied to denuded areas within seven days of the last day of the 30-day period.

b. Temporary stabilization measures shall be applied to denuded areas that may not be at final grade but will be left inactive for one year or less.

c. Permanent stabilization measures shall be applied to denuded areas that are to be left inactive for more than one year.

3. A permanent vegetative cover shall be established on denuded areas to achieve permanent stabilization on areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is uniform, mature enough to survive and will inhibit erosion.

4. Temporary sediment control structures such as basins, traps, berms or sediment barriers shall be constructed prior to beginning other ground-disturbing activity and shall be maintained until the site is stabilized.

5. Stabilization measures shall be applied to earthen structures such as sumps, diversions, dikes, berms and drainage windows within 30 days of installation.

6. Sediment basins.

a. Surface runoff from disturbed areas that is composed of flow from drainage areas greater than or equal to three acres shall be controlled by a sediment basin. The sediment basin shall be designed and constructed to accommodate the anticipated sediment loading from the ground-disturbing activity. The spillway or outfall system design shall take into account the total drainage area flowing through the disturbed area to be served by the basin.

b. If surface runoff that is composed of flow from other drainage areas is separately controlled by other erosion and sediment control measures, then the other drainage area is not considered when determining whether the three-acre limit has been reached and a sediment basin is required.

7. Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. No trees, shrubs, stumps or other woody material shall be placed in fill.

8. Concentrated runoff shall not flow down cut or fill slopes unless contained within an adequate temporary or permanent channel, flume or slope drain structure.

9. Whenever water seeps from a slope face, adequate drainage or other protection shall be provided.

10. All storm sewer inlets that are made operable during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment.

11. Before newly constructed stormwater conveyance channels or pipes are made operational, adequate outlet protection and any required temporary or permanent channel lining shall be installed in both the conveyance channel and receiving channel.

12. Live watercourses.

a. When any construction required for erosion and sediment control, reclamation or stormwater management must be performed in a live watercourse, precautions shall be taken to minimize encroachment, control sediment transport and stabilize the work area. Nonerodible material shall be used for the construction of causeways and cofferdams. Earthen fill may be used for these structures if armored by nonerodible cover materials.

b. When the same location in a live watercourse must be crossed by construction vehicles more than twice in any six-month period, a temporary stream crossing constructed of nonerodible material shall be provided.

c. The bed and banks of a watercourse shall be stabilized immediately after work in the watercourse is completed.

13. If more than 500 linear feet of trench is to be open at any one time on any continuous slope, ditchline barriers shall be installed at intervals no more than the distance in the following table and prior to entering watercourses or other bodies of water.

Distance Barrier Spacing

Percent of Grade	Spacing of Ditchline Barriers in Feet
3–5	135
6–10	80
11–15	60
16+	40

14. Where construction vehicle access routes intersect a paved or public road, provisions, such as surfacing the road, shall be made to minimize the transport of sediment by vehicular tracking onto

the paved surface. Where sediment is transported onto a paved or public road surface, the road surface shall be cleaned by the end of the day.

15. The design and construction or reconstruction of roads shall incorporate appropriate limits for grade, width, surface materials, surface drainage control, culvert placement, culvert size, and any other necessary design criteria required by the director to ensure control of erosion, sedimentation and runoff, and safety appropriate for their planned duration and use. This shall include, at a minimum, that roads are to be located, designed, constructed, reconstructed, used, maintained and reclaimed so as to:

a. Control or prevent erosion and siltation by vegetating or otherwise stabilizing all exposed surfaces in accordance with current, prudent engineering practices;

b. Control runoff to minimize downstream sedimentation and flooding; and

c. Use nonacid or nontoxic substances in road surfacing.

16. Unless approved by the director, all temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization or after the temporary measures are no longer needed. Trapped sediment and the disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized within the permitted area to prevent further erosion and sedimentation.

D. Final reclamation standards.

1. All equipment, structures or other facilities not required for monitoring the site or permanently marking an abandoned well or corehole shall be removed from the site, unless otherwise approved by the director.

2. Each gathering line abandoned in place, unless otherwise agreed to be removed under a right-of-way or lease agreement, shall be disconnected from all sources and supplies of natural gas and petroleum, purged of liquid hydrocarbons, depleted to atmospheric pressure, and cut off three feet below ground surface, or at the depth of the gathering line, whichever is less, and sealed at the ends. The operator shall provide to the division documentation of the methods used, the date and time the pipeline was purged and abandoned.

3. If final stabilization measures are being applied to access roads or ground-disturbed pipeline rights-of-way, or if the rights-of-way will not be redisturbed for a period of 30 days, water bars

shall be placed across them at 30-degree angles at the head of all pitched grades and at intervals no more than the distance in the following table:

Percent of Grade	Spacing of Water Bars in Feet
3–5	135
6–10	80
11–15	60
16+	40

4. The permittee shall notify the division when the site has been graded and seeded for final reclamation in accordance with subdivision C 3 of this section. Notice may be given orally or in writing. The vegetative cover shall be successfully maintained for a period of two years after notice has been given before the site is eligible for bond release.

5. If the land disturbed during gas, oil or geophysical operations will not be reclaimed with permanent vegetative cover as provided for in subsection C of this section, the permittee or applicant shall request a variance to these reclamation standards and propose alternate reclamation standards and an alternate schedule for bond release.

E. The director may waive or modify any of the requirements of this section that are deemed inappropriate or too restrictive for site conditions. A permittee requesting a variance shall, in writing, document the need for the variance and describe the alternate measures or practices to be used. Specific variances allowed by the director shall become part of the operations plan. The director shall consider variance requests judiciously, keeping in mind both the need of the applicant to maximize cost effectiveness and the need to protect off-site properties and resources from damage.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.26, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-270. Stormwater management.

A. This section shall apply whenever an applicant or permittee must complete an erosion and sediment control plan under 4VAC25-150-260. The erosion and sediment control plan shall also describe how stormwater runoff will be managed in accordance with the standards of this section.

B. Areas downstream from permitted sites shall be protected from sediment disposition, erosion and damage due to increases in volume, velocity and peak flow rates of stormwater runoff for the stated frequency storm of 24-hour duration in accordance with the following:

1. Increased volumes of sheet flows or concentrated flows that may cause erosion and sedimentation on adjacent property shall be diverted to a stable outlet, adequate channel or a sediment control, detention or retention facility.

2. Adequacy of all channels and pipes shall be verified in the following manner:

a. The applicant shall demonstrate that the total drainage area to the point of analysis within the channel is 100 times greater than the contributing drainage area of the site in question; or

b. The receiving channel or pipe shall be analyzed as follows:

(1) Natural channels shall be analyzed using data for a two-year storm to verify that stormwater will not overtop channel banks or cause erosion of the channel bed or banks.

(2) All previously constructed man-made channels shall be analyzed using data for a 10-year storm to verify that stormwater will not overtop its banks and using data for a two-year storm to demonstrate that stormwater will not cause erosion of the channel bed or banks.

(3) Pipes and storm sewer systems shall be analyzed using data from a 10-year storm to verify that stormwater will be contained within the pipe or system. A downstream stability analysis at the outfall of the pipe or storm sewer system shall also be performed.

3. All hydrologic analyses shall be based on the existing watershed characteristics and the ultimate development condition of the site.

4. If the applicant chooses an option that includes stormwater detention or retention, then the plan must provide for maintenance of the detention or retention facilities. The plan shall set forth the maintenance requirements of the facility and the person responsible for performing the

maintenance.

5. Outflows from a sediment basin, stormwater management facility or other concentrated runoff leaving a permitted site shall be discharged into an adequate channel.

C. Stormwater runoff which has been contaminated by or come into contact with overburden, raw material, intermediate products, finished products, byproducts or wastes from gas, oil or geophysical operations located on the permitted site shall be managed in accordance with a plan approved by the director.

D. The director may waive or modify any of the requirements of this section that are deemed inappropriate or too restrictive for site conditions. The permittee's written request for a variance shall document the need for the variance and describe the alternate measures or practices to be used. Specific variances allowed by the director shall be documented in the operations plan. The director shall consider variance requests judiciously, keeping in mind both the need of the applicant to maximize cost effectiveness and the need to protect off-site properties and resources from damage.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.27, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998.

4VAC25-150-280. Logs and surveys.

A. Each permittee drilling a well or corehole shall complete a driller's log, a gamma ray log or other log showing the top and bottom points of geologic formations and any other log required under this section. The driller's log shall state, at a minimum, the character, depth and thickness of geological formations encountered, including groundwater-bearing strata, coal seams, mineral beds and gas-bearing or oil-bearing formations.

B. When a permittee or the director identifies that a well or corehole is to be drilled or deepened in an area of the Commonwealth which is known to be underlain by coal seams, the following shall be required:

1. The vertical location of coal seams in the well or corehole shall be determined and shown in the driller's log and gamma ray or other log.

2. The horizontal location of the well or corehole in coal seams shall be determined through an inclination survey from the surface to the lowest known coal seam. Each inclination survey shall be conducted as follows:

a. The first survey point shall be taken at a depth not greater than the most shallow coal seam; and

b. Thereafter shot points shall be taken at each coal seam or at intervals of 200 feet, whichever is less, to the lowest known coal seam.

3. Prior to drilling any well or corehole within 500 feet of a coal seam in which there are active workings, the permittee shall conduct an inclination survey to determine whether the deviation of the well or corehole exceeds one degree from true vertical. If the well or corehole is found to exceed one degree from vertical, then the permittee shall:

a. Immediately cease operations;

b. Immediately notify the coal owner and the division;

c. Conduct a directional survey to drilled depth to determine both horizontal and vertical location of the well or corehole; and

d. Unless granted a variance by the director, correct the well or corehole to within one degree of true vertical.

4. Except as provided for in subdivision B 3 of this section, if the deviation of the well or corehole exceeds one degree from true vertical at any point between the surface and the lowest known coal seam, then the permittee shall:

a. Correct the well or corehole to within one degree of true vertical; or

b. Conduct a directional survey to the lowest known coal seam and notify the coal owner of the actual well or corehole location.

5. The director may grant a variance to the requirements of subdivisions B 3 and B 4 of this section only after the permittee and coal owners have jointly submitted a written request for a variance stating that a directional survey or correction to the well or corehole is not needed to protect the safety of any person engaged in active coal mining or to the environment.

6. If the director finds that the lack of assurance of the horizontal location of the well or corehole to a known coal seam poses a danger to persons engaged in active coal mining or the lack of assurance poses a risk to the public safety or the environment, the director may, until 30 days after a permittee has filed the completion report required in 4VAC25-150-360, require that a directional survey be conducted by the permittee.

7. The driller's log shall be updated on a daily basis. The driller's log and results of any other required survey shall be kept at the site until drilling and casing or plugging a dry hole or corehole are completed.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.28, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-290. Actual well or corehole location.

A. The actual horizontal surface location of the well shall be within three feet of the permitted location designated on the well plat, except where an operator has stated that the location may vary up to 10 feet in the notice as required in § 45.1-361.30 of the Code of Virginia.

B. The permittee shall survey the actual location of the well which may be made from a minimum of two temporary points not disturbed during development of the well or site and shown on the plat submitted with the permit application. The permittee shall submit an updated plat, certified by a licensed land surveyor or licensed professional engineer, showing the actual well location certified to be within three feet of the permitted location, or within 10 feet as provided for in subsection A of this section. This updated plat shall be included with the drilling report submitted in accordance with 4VAC25-150-360.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.29, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998.

4VAC25-150-300. Pits.

A. General requirements.

1. Pits are to be temporary in nature and are to be reclaimed when the operations using the pit are complete. All pits shall be reclaimed within 180 days unless a variance is requested and granted by the field inspector.

2. Pits may not be used as erosion and sediment control structures or stormwater management structures, and surface drainage may not be directed into a pit.

3. Pits shall have a properly installed and maintained liner or liners made of 10 mil or thicker high-density polyethylene or its equivalent.

4. Pits shall be constructed of sufficient size and shape to contain all fluids and maintain a two-foot freeboard.

B. Operational requirements.

1. The integrity of lined pits must be maintained until the pits are reclaimed or otherwise closed. Upon failure of the lining or pit, the operation shall be shut down until the liner and pit are repaired or rebuilt. The permittee shall notify the division, by the quickest available means, of any pit leak.

2. Motor oil and, to the extent practicable, crude oil shall be kept out of the pit. Oil shall be collected and disposed of properly. Litter and other solid waste shall be collected and disposed of properly and not thrown into the pit.

3. At the conclusion of drilling and completion operations or after a dry hole, well or corehole has been plugged, the pit shall be drained in a controlled manner and the fluids disposed of in accordance with 4VAC25-150-420. If the pit is to be used for disposal of solids, then the standards of 4VAC25-150-430 shall be met.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.30, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff.

October 10, 2013.

4VAC25-150-310. Tanks.

A. All tanks installed on or after September 25, 1991, shall be designed and constructed to contain the fluids to be stored in the tanks and prevent unauthorized discharge of fluids.

B. All tanks shall be maintained in good condition and repaired as needed to ensure the structural integrity of the tank.

C. Every permanent tank or battery of tanks shall have secondary containment achieved by constructing a dike or firewall with a capacity of 1-1/2 times the volume of the largest tank when plumbed at the top, or all tanks when plumbed at the bottom, utilizing a double wall tank or another method approved by the division.

D. Dikes and firewalls shall be maintained in good condition, and the reservoir shall be kept free from brush, water, oil or other fluids.

E. Permittees shall inspect the structural integrity of tanks and tank installations, at a minimum, annually. The report of the annual inspection shall be maintained by the permittee for a minimum of three years and be submitted to the director upon request.

F. Load lines shall be properly constructed and operated on the permitted area.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.31, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-320. Blowout prevention.

A. Applicability. All wells shall be equipped to control formation pressure during drilling and servicing as follows:

1. Blowout prevention equipment is required when formation pressures of 1,000 pounds or greater are encountered or are expected to be encountered, or when drilling in an area where there is no prior knowledge of the formation pressures to be encountered.

2. A diverter system is required when formation pressures are expected to be less than 1,000 pounds.

B. All blowout preventers, diverters, choke lines, kill lines and manifolds shall be installed above ground level. Casing heads and optional spools may be installed below ground level provided they are readily accessible.

C. The diverter, chokelines and kill lines shall be anchored, tied or otherwise secured to prevent whipping resulting from pressure surges.

D. Pressure ratings.

1. All pipe fittings, valves and unions placed on or connected with the well or corehole, as well as blowout prevention equipment, casing, casing head, drill pipe, or tubing, shall have a minimum working pressure rating of 110% of the maximum anticipated pressure that the material will be exposed to and shall be in good working condition.

2. All ram type blowout preventers and related equipment shall be tested to 110% of the maximum anticipated formation pressure, not to exceed 70% of the rated burst pressure of the casing that the blowout preventers are connected to before being placed in service. Annular type blowout preventers shall be tested in conformance with the manufacturer's published instructions, or those of a licensed professional engineer, prior to use.

E. While in service, blowout prevention equipment shall be visually inspected daily. A preventer operating test shall be performed at least once on all the blowout prevention equipment except the blind rams which shall be tested on each round trip.

F. All employees on the rig shall be trained, knowledgeable and able to properly operate the blowout

preventer system. In addition, when blowout prevention equipment is installed, at least one person who is certified in blowout prevention and well control procedures by a school of blowout prevention acceptable to the director shall be responsible for the proper testing and operations of the blowout preventers and related equipment.

G. When repairs or other work must be performed to the blowout prevention equipment, drilling and servicing operations must stop until the blowout prevention equipment is returned to service.

H. A record of all tests on the equipment shall be kept at the rig for inspection by the director until drilling or servicing operations have been completed.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.32, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998.

4VAC25-150-330. Swabbing, perforating and wireline operations.

A. All wells and coreholes shall be cleaned into properly constructed pits or containers at a safe distance from the rig floor and from any potential fire hazard.

B. Possible sources of ignition, such as all engines and motors not essential to the swabbing operation, shall be shut down while swabbing operations are being conducted.

C. Swabbing operations shall be conducted only during daylight hours or with adequate illumination.

D. Swabbing shall be conducted so that fluids are routed through a closed-flow system to the maximum extent possible.

E. All oil savers shall be of the type that do not require a person to be near the lubricator or wellhead to control the oil saver.

F. All swabbing lines, blow down lines or flow lines to pits or tanks shall be securely anchored. Whenever hydrocarbons or other volatile fluids may be expected, these lines shall extend a safe distance from the well and away from any other source of ignition.

G. On wells where there is a possibility of flow during swabbing or other wireline operations, a lubricator shall be used that will allow the removal of the swabbing or other tools without venting gas from the well.

H. There shall be no radio or radio-phone transmitters operated where perforating operations are in progress. Warning signs shall be conspicuously placed at entrances to work sites, which shall be at a minimum, 200 feet from the operation where perforating is being done.

I. Upon the conclusion of perforating operations, the work area shall be inspected and all explosive material and scraps shall be placed in containers and removed from the site.

J. Electrical grounding between the well head, service unit, and rig structure shall be made prior to operating tools using explosives.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.33, eff. September 25, 1991; amended, Virginia Register Volume 15,

Issue 2, eff. November 11, 1998.

4VAC25-150-340. Drilling fluids.

A. Operations plan requirements. Applicants for a permit shall provide, prior to commencing drilling, documentation that the water meets the requirements of subsection B of this section, and a general description of the additives and muds to be used in all stages of drilling. Providing that the requirement in 4VAC25-150-340 C is met, variations necessary because of field conditions may be made with prior approval of the director and shall be documented in the driller's log.

B. Water quality in drilling.

1. Before the water-protection string is set, permittees shall use one of the following sources of water in drilling:

a. Water that is from a water well or spring located on the drilling site; or

b. Conduct an analysis of groundwater within 500 feet of the drilling location, and use:

(1) Water which is of equal or better quality than the groundwater; or

(2) Water which can be treated to be of equal or better quality than the groundwater. A treatment plan must be included with the application if water is to be treated.

If, after a diligent search, a groundwater source (such as a well or spring) cannot be found within 500 feet of the drilling location, the applicant may use water meeting the parameters listed in the Department of Environmental Quality's "Ground water criteria," 9VAC25-280-70. The analysis shall include, but is not limited to, the following items:

(1) Chlorides;

(2) Total dissolved solids;

(3) Hardness;

(4) Iron;

(5) Manganese;

(6) PH;

(7) Sodium; and

(8) Sulfate.

Drilling water analysis shall be taken within a one-year period preceding the drilling application.

2. After the water-protection string is set, permittees may use waters that do not meet the standards of subdivision B 1 of this section.

C. Drilling muds. No permittee may use an oil-based drilling fluid or other fluid which has the potential to cause acute or chronic adverse health effects on living organisms unless a variance has been approved by the director. Permittees must explain the need to use such materials and provide the material data safety sheets. In reviewing the request for the variance, the director shall consider the concentration of the material, the measures to be taken to control the risks, and the need to use the material. Permittees shall also identify what actions will be taken to ensure use of the additives will not cause a lessening of groundwater quality.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.34, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-350. Gas, oil or geophysical operations in hydrogen sulfide areas.

A. Applicability. This section shall apply to every permittee who drills or operates a well or drills a corehole:

1. In areas of unknown hydrogen sulfide conditions;

2. Below the base of the devonian shale; or

3. In areas where the hydrocarbons contain gas with a concentration of 100 parts per million (ppm) or greater of hydrogen sulfide as a constituent of the gas.

B. Permittees shall not remove hydrocarbons with a hydrogen sulfide concentration of 100 parts per million or greater from the well site where they were produced unless:

1. The hydrocarbons have been cleaned on-site so that the hydrogen sulfide concentration is less than 100 parts per million; or

2. The permittee has received a variance from the director.

C. General requirements.

1. Each permittee subject to this section shall determine the hydrogen sulfide concentration in the hydrocarbons by a test approved by the director such as a test in accordance with ASTM Standard D-2385-66, or GPA Plant Operation Test Manual C-1, GPA Publication 2265-68.

2. Automatic hydrogen sulfide detection and alarm equipment that will warn of the presence of hydrogen sulfide gas shall be utilized at the site.

D. Materials and equipment.

1. For new construction or modification of facilities, including materials and equipment to be used in drilling and workover operations, permittees shall only use metal components, approved by the director, which have been selected and manufactured so as to be resistant to hydrogen sulfide stress cracking under the operating conditions for which their use is intended. This requirement may be met by use of components that satisfy the requirements of NACE Standard MR-01-75 and API RP-14E, §§ 1.7(c), 2.1(c) and 4.7. The handling and installation of materials and equipment used in hydrogen sulfide service are to be performed in such a manner so as not to induce susceptibility to sulfide stress cracking.

2. Other materials and equipment, including materials and equipment used in drilling and workover operations, may be used for hydrogen sulfide service provided such materials and equipment are proved, as the result of advancements in technology or as the result of control and knowledge of operating conditions such as temperature and moisture content, suitable for the use intended and where such usage is technologically acceptable as good engineering practice, and the director has approved a variance for the materials and equipment for the specific uses.

3. In the event of a failure of any element of an existing system as the result of hydrogen sulfide stress cracking, the compliance status of the system shall be determined by the director after the operator has submitted a detailed written report on the failure to the director.

E. Reporting. The permittee shall report the hydrogen sulfide concentrations of the hydrocarbon in any well or corehole where the hydrogen sulfide concentration is equal to or exceeds 100 parts per million with the drilling report under 4VAC25-150-360 or with the plugging affidavit for coreholes under 4VAC25-150-460.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.35, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998.

4VAC25-150-360. Drilling, completion and other reports.

A. Each permittee conducting drilling shall file, electronically or on a form prescribed by the director, a drilling report within 90 days after a well reaches total depth.

B. Each permittee drilling a well shall file, electronically or on a form prescribed by the director, a completion report within 90 days after the well is completed.

C. The permittee shall file the driller's log, the results of any other log or survey required to be run in accordance with this chapter or by the director, and the plat showing the actual location of the well with the drilling report, unless they have been filed earlier.

D. The permittee shall, within 90 days of reaching total depth, file with the division the results of any gamma ray, density, neutron and induction logs, or their equivalent, that have been conducted on the wellbore in the normal course of activities that have not previously been required to be filed.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.36, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-370. Wellhead equipment.

A. All wellhead connections and equipment, including but not limited to pipe fittings, valves and unions placed on or connected with a well, well casing, casing head, drill pipe, or tubing shall have a working pressure rating of a minimum of 110% of the maximum anticipated pressure that the material will be exposed to, and shall be in good working condition.

B. Adequate and proper wellhead equipment shall be installed and maintained in good working order on every well that is not permanently abandoned and plugged, so that pressure measurements may be obtained at any time. Valves shall be installed so that pressures can be separately obtained from each production string.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.37, eff. September 25, 1991.

4VAC25-150-380. Incidents, spills and unpermitted discharges.

A. Incidents. A permittee shall, by the quickest available means, notify the division in the event of any unplanned off-site disturbance, fire, blowout, pit failure, hydrogen sulfide release, unanticipated loss of drilling fluids, or other incident resulting in serious personal injury or an actual or potential imminent danger to a worker, the environment, or public safety. The permittee shall take immediate action to abate the actual or potential danger. The permittee shall submit a written or electronic report within seven days of the incident containing:

1. A description of the incident and its cause;

2. The date, time and duration of the incident;

3. A description of the steps that have been taken to date;

4. A description of the steps planned to be taken to prevent a recurrence of the incident; and

5. Other agencies notified.

B. On-site spills.

1. A permittee shall take all reasonable steps to prevent, minimize, or correct any spill or discharge of fluids on a permitted site which has a reasonable likelihood of adversely affecting human health or the environment. All actions shall be consistent with the requirements of an abatement plan, if any has been set, in a notice of violation or closure, emergency or other order issued by the director.

2. A permittee shall orally report on-site spills or unpermitted discharges of fluids which are not required to be reported in subsection A of this section to the division within 24 hours. The oral report shall provide all available details of the incident, including any adverse effects on any person or the environment. A written report shall be submitted within seven days of the spill or unpermitted discharge. The written report shall contain:

a. A description of the incident and its cause;

b. The period of release, including exact dates and times;

c. A description of the steps to date; and

d. A description of the steps to be taken to prevent a recurrence of the release.

C. Off-site spills. Permittees shall submit a written report of any spill or unpermitted discharge of fluids that originates off of a permitted site with the monthly report under 4VAC25-150-210. The written report shall contain:

1. A listing of all agencies contacted about the spill or unpermitted discharge; and

2. All actions taken to contain, clean up or mitigate the spill or unpermitted discharge.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.38, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-390. Shut-in wells.

A. If a well is shut-in or otherwise not produced for a period of 12 consecutive months, the permittee shall measure the shut-in pressure on the production string or strings and report such pressures to the division annually. If the well is producing on the backside or otherwise through the casing, the permittee shall measure the shut-in pressure on the annular space.

B. A report of the pressure measurements on the nonproducing well shall be maintained and reported to the director annually by the permittee for a maximum period of two years.

C. Should the well remain in a nonproducing status for a period of two years, the permittee shall submit a plan for future well production to the director. A nonproducing well shall not remain unplugged for more than a three-year period unless approved by the director.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.39, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-400. Measurement of gas and oil.

A. Natural gas.

1. Each producer shall measure all gas produced from each well, or as prescribed by the director, using a method permitting the computation of volumes, in Mcf. This requirement may be met by use of the standards in:

a. "Orifice Metering of Natural Gas," ANSI/API 2530, American Gas Association, 1978;

b. "AGA Gas Measurement Manual, Part 2: Displacement Measurement," American Gas Association, 1977; or

c. "AGA Gas Measurement Manual, Part 3: Gas Turbine Metering," American Gas Association, 1989.

2. The director may require use of meters at designated places to obtain accurate records of the production of gas.

B. Oil. Each permitted oil operation shall use sufficient tanks or meters to measure the volume of oil produced. In no case shall meters be the sole means of measuring oil, unless such metering is conducted in accordance with a method approved by the director such as the API Manual of Petroleum Measurement Standards, 1981, Chapter 6.1, LACT Systems. A permittee may request a variance from the director to use a gauge tank to check the readings of meters.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.40, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998.

4VAC25-150-410. Venting and flaring of gas; escape of oil.

A. It shall be unlawful for any permittee to allow crude oil or natural gas to escape from any well, gathering pipeline or storage tank except as provided for in this section or in an approved operations plan. The permittee shall take all reasonable steps to shut in the gas or oil in the well, or make the necessary repairs to the well, gathering pipeline or storage tank to prevent the escape. All actions shall be consistent with the requirements of an abatement plan, if any has been set, in a notice of violation or closure, emergency or other order issued by the director.

B. A permittee shall drill or repair a well with special diligence so that waste of gas or oil from the well shall not continue longer than reasonably necessary under the following circumstances:

1. When, during drilling, gas or oil is found in the well and the permittee desires to continue to search for gas or oil by drilling deeper; or

2. When making repairs to any well producing gas or oil, commonly known as cleaning out.

C. No gas shall be flared or vented from a well for more than seven days after completion of the well except in these circumstances:

1. When a well must be blown to remove accumulated formation fluid which has restricted efficient production, or the well must be otherwise cleaned out as provided for in subsection B of this section;

2. For the safety of mining operations;

3. For any activity excluded in the definition of "waste" under § 45.1-361.1 of the Act; or

4. For any other operational reason approved in advance by the director.

D. In all cases where both gas and oil are found and produced from the same stratum, the permittee shall use special diligence to conserve and save as much of the gas as is reasonably possible.

E. Venting shall only be used when flaring is not safe or not feasible.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.41, eff. September 25, 1991; amended, Virginia Register Volume 15,

Issue 2, eff. November 11, 1998.

4VAC25-150-420. Disposal of pit and produced fluids.

A. Applicability. All fluids from a well, pipeline or corehole shall be handled in a properly constructed pit, tank or other type of container approved by the director.

A permittee shall not dispose of fluids from a well, pipeline or corehole until the director has approved the permittee's plan for permanent disposal of the fluids. Temporary storage of pit or produced fluids is allowed with the approval of the director. Other fluids shall be disposed of in accordance with the operations plan approved by the director.

B. Application and plan. The permittee shall submit an application for either on-site or off-site permanent disposal of fluids on a form prescribed by the director. Maps and a narrative describing the method to be used for permanent disposal of fluids must accompany the application if the permittee proposes to land apply any fluids on the permitted site. The application, maps, and narrative shall become part of the permittee's operations plan.

C. Removal of free fluids. Fluids shall be removed from the pit to the extent practical so as to leave no free fluids. In the event that there are no free fluids for removal, the permittee shall report this on the form provided by the director.

D. On-site disposal. The following standards for on-site land application of fluids shall be met:

1. Fluids to be land-applied shall meet the parameters listed in the Department of Environmental Quality's "Ground water criteria," (9VAC25-280-70), following criteria:

Acidity: <alkalinity

Alkalinity: >acidity

Chlorides: <5,000 mg/l

Iron: <7 mg/l

Manganese: <4 mg/l

Oil and Grease: < 15 mg/l

pH: 6-9 Standard Units

Sodium Balance: SAR of 8-12

2. Land application of fluids shall be confined to the permitted area.

3. Fluids shall be applied in a manner which will not cause erosion or runoff. The permittee shall take into account site conditions such as slope, soils and vegetation when determining the rate and volume of land application on each site. As part of the application narrative, the permittee shall show the calculations used to determine the maximum rate of application for each site.

4. Fluid application shall not be conducted when the ground is saturated, snow-covered or frozen.

5. The following buffer zones shall be maintained unless a variance has been granted by the director:

a. Fluid shall not be applied closer than 25 feet from highways or property lines not included in the acreage shown in the permit.

b. Fluid shall not be applied closer than 50 feet from surface watercourses, wetlands, natural rock outcrops, or sinkholes.

c. Fluid shall not be applied closer than 100 feet from water supply wells or springs.

6. The permittee shall monitor vegetation for two years after the last fluid has been applied to a site. If any adverse effects are found, the permittee shall report the adverse effects in writing to the division.

7. The director may require monitoring of groundwater quality on sites used for land application of fluids to determine if the groundwater has been degraded.

E. Off-site disposal of fluids.

1. Each permittee using an off-site facility for disposal of fluids shall submit:

a. A copy of a valid permit for the disposal facility to be used; and

b. Documentation that the facility will accept the fluids.

2. Each permittee using an off-site facility for disposal of fluids shall use a waste-tracking system to document the movement of fluids off of a permitted site to their final disposition. Records compiled by this system shall be reported to the division annually and available for inspection on request. Such records shall be retained until such time the injection well is reclaimed and has passed bond release.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.42, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-430. Disposal of solids.

A. Applicability. All drill cuttings and solids shall be disposed of in the on-site pit as provided in subsection C of this section or as approved by the director. All other solid waste from gas, oil or geophysical operations shall be disposed of in a facility permitted to accept that type of waste.

B. Plan. Each operator shall submit a description of how drill cuttings and solids will be disposed of in the operations plan.

C. Disposal in a pit. Drill cuttings and solids may be disposed of on-site in an approved pit, without testing of the material.

The drill cuttings and solids shall be covered with a liner meeting the standards of 4VAC25-150-300, or a low-permeability clay cap, and shall be covered by soil. The combination of soil and liner or cap shall be at least four feet thick, capable of shielding the cuttings and solids remaining in the pit, suitable for supporting vegetation, and sloped to prevent ponding.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.43, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2. eff. November 11, 1998.

Article 6

Plugging and Abandonment

4VAC25-150-435. Plugging for abandonment or plug-back operations.

A. Permit requirements; variances.

1. Plugging operations shall not commence until a detailed plugging plan has been submitted to and approved by the director. A permit modification is required if the well was not previously permitted for plugging.

2. Any person may file an application with the director to replug a previously plugged well in any manner permissible under provisions of this section to facilitate the safe mining-through of the well at a later date. The application shall be treated in all respects like any other application for a permit under § 45.1-361.29 of the Code of Virginia.

3. The director may, upon application by the permittee, approve a variance to the prescribed plugging methods for the following reasons if it is determined that the alternate plan meets the requirements of the Act:

a. The coal owner or operator requests a special plugging program to facilitate mine safety, mining through the well, or to obtain approval from another governmental agency for the safe mining-through of a well. The application for a variance must include documentation of the request from the coal owner or operator.

b. The permittee has obtained written authorization from the coal owner or operator for alternate plugging of the coal-bearing section. The application for a variance must include documentation of approval by the coal owner or operator.

c. Downhole conditions such as junk in the hole, a stuck or collapsed casing, caving or other adverse conditions which would prevent proper execution of the prescribed plugging methods.

d. A permittee presents an alternate plugging plan which may differ in method from that prescribed herein, but which will achieve the desired result.

B. Plugging in open hole. When a well or section of a well without casing is to be plugged or plugged back, it shall be sealed and filled as prescribed in this section.

1. At a point approximately 20 feet above each oil, gas or water-bearing stratum in open hole, a plug shall be placed so as to completely seal the wellbore. Whenever two or more gas or oil stratum are not widely separated, they may be treated as a single stratum and plugged accordingly. Cement plugs shall be at least 100 feet in length. At least 20 feet of cement shall be placed on top of open hole bridge plugs.

2. At each coal seam, a cement plug shall be placed from not less than 50 feet below the base of the coal to not less than 50 feet above the top of the coal. Whenever two or more coal seams are not widely separated, they may be treated as a single seam and plugged accordingly. This subsection applies only to coal seams which occur at a depth compatible with mining. Coal-bearing sections at greater depths may be plugged in accordance with subdivision B 1 of this section.

3. If a source of groundwater capable of having a beneficial use is exposed in open hole below surface (water-protection) casing, a cement plug at least 100 feet in length shall be placed below the base of the lowest such groundwater zone.

4. A cement plug of a minimum length of 100 feet shall be placed across the shoe of the surface (water-protection) casing. The plug shall be placed so as to have approximately equal lengths in open hole and inside casing. If the well is without surface casing, a continuous cement plug shall be placed from at least 50 feet below the base of the lowest known aquifer or 300 feet depth, whichever is deeper, to the surface.

5. All intervals below and between plugs shall be filled with drilling mud, bentonite gel, or other appropriately weighted materials approved by the director.

C. Plugging in cased hole. When a cased hole or section of a cased hole is to be plugged or plugged back, it shall be sealed and filled as prescribed in this section.

1. All perforated intervals shall be either squeeze-cemented or otherwise isolated from the wellbore by suitable plugs placed across or immediately above the perforated interval. Cement plugs placed across perforations shall extend to at least 50 feet above the top perforations. A cement plug shall be placed to at least 50 feet above squeezed perforations. Cement plugs placed entirely above perforations shall be at least 100 feet in length. At least 20 feet of cement shall be placed on top of bridge plugs, cement retainers, or other tools left in the hole.

2. At each coal seam which is behind a properly installed and cemented coal-protection casing, a cement plug shall be placed from not less than 50 feet below the base of the coal to not less than 50 feet above the top of the coal. Whenever two or more coal seams are not widely separated, they may be treated as a single seam and plugged accordingly.

3. If casing is not to be pulled, and there is uncemented annulus behind the pipe, plugging shall be as follows:

a. Each oil, gas or water-bearing stratum present behind the pipe in an uncemented annulus must be isolated by perforating the casing at each zone and squeezing cement up into the zone, or circulating cement up the annulus such that a cement fill-up of not less than 100 feet is achieved. When squeezing or circulating the annulus, a cement plug of at least 50 feet shall be placed inside the casing above the perforations.

b. If the well penetrates a minable coal-bearing section, and no coal-protection casing was used, and if surface (water-protection) casing is either absent or not properly placed and cemented to surface, the production casing shall be converted to a coal-protection string by perforating at least 50 feet below the base of the lowest coal stratum, and circulating cement in the annulus from that point to the surface.

c. At each coal seam in a minable coal-bearing section which is protected by a properly installed and cemented coal-protection string, a cement plug shall be placed in casing from not less than 50 feet below the base of the coal to not less than 50 feet above the top of the coal. If there is uncemented annulus between the inner casing and the coal-protection string, the casing shall be perforated to allow cement to be circulated over the prescribed interval, and a plug of equal length shall be placed inside the inner casing.

d. If a fresh water aquifer is exposed to the wellbore in an uncemented annulus, it shall be isolated by perforating the casing at least 100 feet below the aquifer and squeezing cement into the annulus or circulating it up the annulus so that a fill-up of not less than 100 feet is achieved. When squeezing or circulating cement, a cement plug of at least 100 feet shall be placed inside the casing above the perforation.

e. At a point no less than 50 feet below the shoe of surface (water-protection) string, the casing shall be perforated and cement circulated up the annulus to a minimum fill-up of 100 feet. A plug of equal length shall be placed inside the casing.

f. From a point not less than 50 feet below surface, a cement plug shall be installed which reaches the surface. If any uncemented annuli are present at the surface, the voids should be filled and sealed to the greatest extent possible by introducing cement from the surface.

g. All intervals below and between plugs shall be filled with drilling mud, bentonite gel, or other appropriately weighted materials approved by the director.

4. If casing is to be pulled, plugging shall be as follows:

a. All perforated intervals shall be isolated as described in subdivision C 1 of this section.

b. Casing stubs shall be isolated by placing a plug across or above the cut-off point. Cement plugs shall be at least 100 feet in length and shall be placed so as to have approximately equal lengths inside and above the remnant casing. Permanent bridge plugs may be placed above the stub and shall be capped by at least 20 feet of cement.

D. Plugging operations involving uncemented water-protection casing or coal-protection casing.

1. If the annulus of the largest casing present across a minable coal-bearing section is not cemented across that section, then one of the two procedures listed below must be followed:

a. The casing must be perforated at least 50 feet below the lowest coal seam, and cement circulated in the annulus to the surface (if water-protection casing is absent or not properly placed and cemented to surface), or to at least 100 feet above the highest coal (if the casing is to be partially pulled to facilitate plugging operations in the fresh water zone). Plugging shall proceed according to cased hole requirements; or

b. The casing shall be pulled from the well, and plugging shall proceed according to open hole requirements.

2. If the annulus of the largest casing present across the fresh-water-bearing section is not cemented across that section, then one of the two procedures listed below must be followed:

a. The casing shall be perforated below the lowest known fresh-water zone or at a minimum depth of 300 feet. Cement shall be circulated in the annulus to the surface. Plugging shall proceed according to cased hole requirements; or

b. The casing shall be pulled from the well, and a continuous cement plug shall be placed from below the base of the lowest known fresh-water aquifer exposed to the wellbore, or 300-foot depth, whichever is deeper, to the surface.

E. Unfillable cavities. When an unfillable cavity such as a cavern, mine void, blast stimulation zone or gob completion is encountered, the section shall be plugged as follows:

1. If the stratum with the unfillable cavities is the lowest gas or oil stratum in the well, a plug shall be placed at the nearest suitable point not less than 20 feet above the stratum. Cement plugs shall be at least 100 feet long, and at least 20 feet of cement shall be placed on top of bridge plugs.

2. If the stratum with unfillable cavities is above the lowest gas or oil stratum, a plug shall be placed below the stratum and shall extend to within 20 feet of its base. A plug shall also be placed above the stratum as described in subdivision E 1 of this section.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from Virginia Register Volume 15, Issue 2, eff. November 11, 1998.

4VAC25-150-440. Abandonment of a gas or oil well or corehole as a water well.

A permittee wishing to develop a gas or oil well or corehole as a water well shall submit an application for a permit modification in accordance with 4VAC25-150-110.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.44, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998.

4VAC25-150-450. Identification, plugging and control of wells or coreholes in which radioactive source logging tools have been abandoned.

A. Permittees shall, by the quickest available means, notify the division of the loss of a radioactive source in a well or corehole.

B. No radioactive source shall be declared abandoned until all reasonable effort has been expended to retrieve the radioactive source tool.

C. A well or corehole in which a radioactive source has been abandoned shall be mechanically equipped and plugged so as to prevent either accidental or intentional mechanical disintegration of the radioactive source, as follows:

1. Sources abandoned in the bottom of the hole shall be covered with a 100-foot standard color cement plug, dyed with red iron oxide, and an approved deflection device shall be placed on top of the plug. The dye is to alert any reentry operator prior to encountering the source. From this point to the surface, the well or corehole shall be plugged as provided in 4VAC25-150-435.

2. Sources lost in locations other than in the bottom of the hole shall be abandoned in accordance with the following standards:

a. If a well or corehole with the lost radioactive source will be abandoned and plugged, then a 100-foot standard color cement plug, dyed with red iron oxide, shall be placed above the abandoned source and an approved deflection device shall be placed on top of the plug. From this point to the surface, the well or corehole shall be plugged as provided in 4VAC25-150-435.

b. If a well or corehole is to be deviated or sidetracked around a lost radioactive source, then a 100-foot standard color cement plug, dyed with red iron oxide, shall be placed above the abandoned source, and an approved deflection device shall be placed on top of the plug.

c. Upon abandoning a well in which a radioactive source has been cemented in place behind a casing string above total depth, a 100-foot standard color cement plug, dyed with red iron oxide, shall be placed opposite the abandoned source and an approved deflection device placed on top of the plug, in addition to the plugging standards provided in 4VAC25-150-435.

3. If a permittee finds, after expending reasonable effort, that hole conditions make it impossible to

abandon the source as prescribed in subdivision C 1 or C 2 of this section, then the permittee shall apply for a variance from the director for an alternate abandonment procedure.

D. Upon plugging and abandoning any well or corehole in which a radioactive source has been left in the hole, and after removing the wellhead equipment, a permanent plaque shall be attached to the top of the casing left in the hole in such a manner that reentry cannot be accomplished without disturbing the plaque. The plaque shall serve as a visual warning to any person reentering the hole that a radioactive source has been abandoned in place in the well. The plaque shall contain the trefoil radiation symbol with a radioactive warning and shall be constructed of a long-lasting material such as monel, stainless steel or brass.

E. The permittee shall erect a permanent marker as a visual warning to any person who may reenter the hole for any reason, showing that the hole contains a radioactive source. In addition to meeting the requirements of 4VAC25-150-460, any marker for a hole containing a radioactive source shall bear the following information:

1. Surface location of the well;

2. Name of the lease;

3. Source of material abandoned in the well;

4. Total depth of the well;

5. Depth at which the source has been abandoned;

6. Date of the abandonment of the source;

7. Activity of the source;

8. Plug-back depth; and

9. A warning not to drill below the plug-back depth.

F. The information required by subsection E of this section shall be provided with the plugging affidavit submitted pursuant to 4VAC25-150-460.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.45, eff. September 25, 1991; amended, Virginia Register Volume 15,

Issue 2, eff. November 11, 1998.

4VAC25-150-460. Identifying plugged wells and coreholes; plugging affidavit.

A. Abandoned wells and coreholes shall be permanently marked in a manner as follows:

1. The marker shall extend not less than 30 inches above the surface and enough below the surface to make the marker permanent.

2. The marker shall indicate the permittee's name, the well name, the permit number and date of plugging.

B. A permittee may apply for a variance from the director to use alternate permanent markers. Such alternate markers shall provide sufficient information for locating the abandoned well or corehole. Provisions shall also be made to provide for the physical detection of the abandoned well or corehole from the surface by magnetic or other means including a certified map with the utilization of current GPS surveys.

C. When any well or corehole has been plugged or replugged in accordance with 4VAC25-150-435, two persons, experienced in plugging wells or coreholes, who participated in the plugging of a well or corehole, shall complete the plugging affidavit designated by the director, setting forth the time and manner in which the well or corehole was plugged and filled, and the permanent marker was placed.

D. One copy of the plugging affidavit shall be retained by the permittee, one shall be mailed to any coal owner or operator on the tract where the well or corehole is located, and one shall be filed with the division within 90 days after the day the well was plugged.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.46, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-470. Release of bond.

A. Application for bond release.

A permittee desiring to have a bond released by the director shall apply in writing identifying the operation, and documenting that the well or disturbed land meets the requirements for partial or full bond release. A bond may be reduced or released by the director only in writing.

B. Partial bond release.

The portion of a permittee's bond covering disturbed land may be released as follows:

1. A permittee with an individual bond under § 45.1-361.31 A of the Code of Virginia shall be eligible for release of the portion of the bond covering disturbed land after the land has been successfully reclaimed to the standards of 4VAC25-150-260 of this chapter.

2. A permittee with a blanket bond under § 45.1-361.31 B of the Code of Virginia shall be eligible for release of 75% of the portion of the bond calculated on acreage of disturbed land after the land has been successfully reclaimed to the standards of 4VAC25-150-260 of this chapter.

C. Full bond release.

A permittee's bond or coverage of a well and land under a blanket bond is eligible for full release when:

1. A well has been plugged, the plugging affidavit has been submitted to the director and the land under the bond has been successfully reclaimed to the standards of 4VAC25-150-260 of this chapter;

2. The well is abandoned as a water well in accordance with 4VAC25-150-440 of this chapter and the land under the bond has been successfully reclaimed to the standards of 4VAC25-150-260 of this chapter;

3. The well is abandoned as a vertical ventilation hole in accordance with 4VAC25-150-650 of this chapter and the land under the bond is permitted by the department's Division of Mined Land Reclamation or has been successfully reclaimed to the standards of 4VAC25-150-260 of this chapter; or

4. Other bond has been accepted by the director.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.47, eff. September 25, 1991.

4VAC25-150-480. Orphaned wells; right of entry.

A. Written consent from the owner of record or lessee, or their authorized agents, is the preferred means for obtaining agreements to enter lands in order to carry out plugging of orphaned wells and restoration of their sites. Nonconsensual entry under § 45.1- 361.27 E of the Code of Virginia shall be undertaken only after reasonable efforts have been made to obtain written consent.

B. Consent and entry shall meet the following standards:

1. The director or authorized contractors may enter lands to perform plugging and restoration activities or to conduct studies or investigations of orphaned wells if consent from the owner is obtained.

2. If consent is not obtained, then, prior to entry under this section, the director shall find, in writing, with supporting reasons, that:

a. Citizens or the environment of the Commonwealth or persons involved in coal or mineral mining may be at risk from an orphaned well; and

b. The owner of the land where entry must be made to plug an orphaned well and restore the site is not known or readily available, or the owner will not give permission for the director or authorized contractors to enter to plug the orphaned well and reclaim the site.

C. If consent is not obtained, the director shall give notice of his intent to enter for the purposes of conducting plugging and restoration at least 30 days before entry into the property. The notice shall be in writing and shall be mailed, return receipt requested, to the owner, if known, with a copy of the findings required by this section. If the owner is not known, or if the current mailing address of the owner is not known, notice shall be posted in one or more places on the property to be entered, where it is readily visible to the public. The notice posted on the property and the newspaper notice pursuant to § 45.1-361.40 C of the Code of Virginia shall include a statement of where the findings required by this section may be inspected or obtained.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 1.48, eff. September 25, 1991.

Part II

Conventional Gas and Oil Wells and Class II Injection Wells

4VAC25-150-490. Applicability, conventional gas and oil wells and Class II injection wells.

A. Part II of this chapter sets forth requirements unique to conventional gas and oil wells and wells classified as Class II injection wells by the United States, Environmental Protection Agency under 40 CFR Part 146, Section 146.5.

B. Permittees must comply with the standards of general applicability in Part I of this chapter and with the standards for conventional gas and oil and Class II injection wells in this part, except that whenever the Environmental Protection Agency imposes a requirement under the Underground Injection Control (UIC) Program, 40 CFR Part 146, Sections 146.3, 146.4, 146.5, 146.6, 146.7, 146.8, 146.22 and 146.23 that governs an activity also governed by this chapter, the Environmental Protection Agency requirement shall control the permit issued under this chapter.

C. An application for a permit for a Class II injection well which has not been previously drilled under a permit from the director shall be submitted as an application for a new permit. An application for a permit for conversion of a permitted gas or oil well to a Class II injection well shall be submitted as an application for a permit modification.

D. The director shall not issue a permit for a Class II injection well until after the Environmental Protection Agency has issued its permit for the injection well.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 2.1, eff. September 25, 1991; amended, Virginia Register Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-500. Application for a permit, conventional well or Class II injection well.

A. In addition to the requirements of 4VAC25-150-80 or 4VAC25-150-110, every application for a permit or permit modification for a conventional gas or oil well or a Class II injection well shall contain:

1. The approximate depth to which the well is proposed to be drilled or deepened, or the actual depth to which the well has been drilled;

2. The approximate depth and thickness, if applicable, of all known coal seams, known groundwater-bearing strata, and other known gas or oil strata between the surface and the depth to which the well is proposed to be drilled;

3. If casing or tubing is proposed to be or has been set, a description of the entire casing program, including the size of each string of pipe, the starting point and depth to which each string is to be or has been set, and the extent to which each string is to be or has been cemented; and

4. If the proposed work is for a Class II injection well, a copy of either the permit issued by, or the permit application filed with the Environmental Protection Agency under the Underground Injection Control Program.

5. The procedures to be followed to protect the safety of persons working in an underground coal mine for any well to be drilled within 200 feet of or into active workings. The permittee shall give notice of such drilling to the mine operator and the chief at least two working days prior to drilling.

B. In addition to the requirements of 4VAC25-150-80 and 4VAC25-150-110, every application for a permit or permit modification for a conventional gas or oil well or a Class II injection well may contain, if the proposed work is to drill, redrill or deepen a well, a plan showing the proposed manner of plugging the well immediately after drilling if the proposed well work is unsuccessful.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 2.2, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Errata, 15:6 VA.R. 938 December 7, 1998; amended, Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-510. Plats, conventional wells or Class II injection wells.

A. In addition to the requirements of 4VAC25-150-90, every plat for a conventional gas or oil well shall show:

1. The boundaries of any drilling unit established by the board around the subject well;

2. The boundaries and acreage of the tract on which the well is located or is to be located;

3. The boundaries and acreage of all other tracts within one-half of the distance specified in § 45.1-361.17 of the Code of Virginia or within one-half of the distance to the nearest well completed in the same pool, whichever is less, or within the boundaries of a drilling unit established by the board around the subject well;

4. Surface owners on the tract to be drilled and on all other tracts within the unit where the surface of the earth is to be disturbed;

5. All gas, oil or royalty owners on any tract located within one half of the distance specified in § 45.1-361.17 of the Code of Virginia or within one-half of the distance to the nearest well completed in the same pool, whichever is less, or within the boundaries of a drilling unit established by the board around the subject well;

6. Coal owners and mineral owners on the tract to be drilled and on all other tracts located within 500 feet of the subject well location;

7. Coal operators who have registered operations plans with the department for activities located on the tract to be drilled, or who have applied for or obtained a coal mine license, coal surface mine permit or a coal exploration notice or permit from the department with respect to all tracts within 500 feet of a proposed gas or oil well;

8. Any inhabited building, highway, railroad, stream, permitted surface mine or permitted mine opening within 500 feet of the proposed well; and

9. If the plat is for an enhanced oil recovery injection well, any other well within 2,500 feet of the proposed or actual well location, which shall be presumed to embrace the entire area to be affected by an enhanced oil recovery injection well in the absence of a board order establishing units in the target pool of a different size or configuration.

B. If the well location is underlain by known coal seams, or if required by the director, the well plat shall locate the well and two permanent points or landmarks with reference to the mine coordinate system if one has been established for the area of the well location, and shall in any event show all other wells, surface mines and mine openings within the scope of the plat.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 2.3, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-520. Setback restrictions, conventional wells or Class II injection wells.

No permit shall be issued for any well to be drilled closer than 200 feet from any inhabited building unless site conditions as approved by the director warrant the permission of a lesser distance and there exists a lease or agreement between the operator and the owner of the inhabited building. A copy of the lease or agreement shall accompany the application for a permit.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 2.4, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-530. Casing requirements for conventional gas or oil wells.

A. Water-protection string.

1. Except as provided in subdivision A 5 of this section, the permittee shall set a water-protection string to a point at least 300 feet below the surface or 50 feet below the deepest known groundwater horizon, whichever is deeper, circulated and cemented in to the surface. If the cement does not return to the surface, every reasonable attempt shall be made to fill the annular space by introducing cement from the surface.

2. The operator shall test or require the cementing company to test the cement mixing water for pH and temperature prior to mixing the cement and to record the results on the cementing ticket.

3. After the cement is placed, the operator shall wait a minimum of eight hours and allow the cement to achieve a calculated compressive strength of 500 psi before drilling, unless the director approves a shorter period of time. The wait-on-cement (WOC) time shall be recorded within the records kept at the drilling rig while drilling is taking place.

4. When requested by the director, the operator shall submit copies of cement tickets or other documents that indicate the above specifications have been followed.

5. A coal-protection string may also serve as a water-protection string.

B. Coal-protection strings.

1. When any well penetrates coal seams that have not been mined out, the permittee shall, except as provided in subdivisions B 2 and B 3 of this section, set a coal-protection string. The coal-protection string shall exclude all fluids, oil, gas and gas pressure except that which is naturally present in each coal seam. The coal-protection string shall also exclude all injected material or disposed waste from the coal seams and the wellbore. The string of casing shall be set to a point at least 50 feet below the lowest coal seam, or as provided in subdivision B 3 of this section, and shall be circulated and cemented from that point to the surface or to a point not less than 50 feet into the water-protection string or strings which are cemented to the surface.

2. For good cause shown, either before or after the permit is issued, when the procedure specified in subdivision B 1 is demonstrated by the permittee as not practical, the director may approve a casing program involving the cementing of a coal-protection string in multiple stages, or the

cementing of two or more coal-protection strings, or the use of other alternative casing procedures. The director may approve the program provided he is satisfied that the result will be operationally equivalent to compliance with the provisions of subdivision B 1 of this section for the purpose of permitting the subsequent safe mining through of the well or otherwise protecting the coal seams as required by this section. In the use of multiple coal-protection strings, each string below the topmost string shall be cemented at least 50 feet into the next higher string or strings that are cemented to the surface and be verified by a cement top log.

3. Depth of coal-protection strings:

a. A coal-protection string shall be set to the top of the red shales in any area underlain by them unless, on a showing by the permittee in the permit application, the director has approved the casing point of the coal-protection string at some depth less than the top of the red shales. In such event, the permittee shall conduct a gamma ray/density log survey on an expanded scale to verify whether the well penetrates any coal seam in the uncased interval between the bottom of the coal-protection string as approved and the top of the red shales.

b. If an unanticipated coal seam or seams are discovered in the uncased interval, the permittee shall report the discovery in writing to the director. The permittee shall cement the next string of casing, whether a part of the intermediate string or the production string, in the applicable manner provided in this section for coal-protection strings, from a point at least 50 feet below the lowest coal seam so discovered to a point at least 50 feet above the highest coal seam so discovered.

c. The gamma ray/density log survey shall be filed with the director at the same time the driller's log is filed under 4VAC25-150-360.

d. When the director believes, after reviewing documentation submitted by the permittee, that the total drilling in any particular area has verified the deepest coal seam higher than the red shales, so that further gamma ray/density logs on an expanded scale are superfluous for the area, he may waive the constructing of a coal-protection string or the conducting of such surveys deeper than 100 feet below the verified depth of the deepest coal seam.

C. Coal-protection strings of wells drilled prior to July 1, 1982. In the case of wells drilled prior to July 1, 1982, through coal seams without coal-protection strings substantially as prescribed in subsection B of

this section, the permittee shall retain such coal-protection strings as were set. During the life of the well, the permittee shall, consistent with a plan approved by the director, keep the annular spaces between the various strings of casing adjacent to coal seams open to the extent possible, and the top ends of all such strings shall be provided with casing heads, or such other approved devices as will permit the free passage of gas or oil and prevent filling of the annular spaces with dirt or debris.

D. Producing from more than one stratum. The casing program for any well designed or completed to produce from more than one stratum shall be designed in accordance with the appropriate standard practices of the industry.

E. Casing through voids.

1. When a well is drilled through a void, the hole shall be drilled at least 30 feet below the void, the annular space shall be cemented from the base of the casing up to the void, and every reasonable attempt shall be made to fill the annular space from the top of the void to the surface, or it shall be cemented at least 50 feet into the next higher string or strings of casing that are cemented to the surface and be verified by a cement top log.

2. For good cause shown, the director may approve alternative casing procedures proposed by the permittee, provided that the director is satisfied that the alternative casing procedures are operationally equivalent to the requirements imposed by subdivision E 1 of this section.

3. For good cause shown, the director may impose special requirements on the permittee to prevent communication between two or more voids.

F. A well penetrating a mine other than a coal mine. In the event that a permittee has requested to drill a well in such a location that it would penetrate any active mine other than a coal mine, the director shall approve the safety precautions to be followed by the permittee prior to the commencement of activity.

G. Reporting of lost circulation zones. The permittee shall report to the director as soon as possible when an unanticipated void or groundwater horizon is encountered that results in lost circulation during drilling. The permittee shall take every necessary action to protect the lost circulation zone.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 2.5, eff. September 25, 1991; amended, Virginia Register Volume 15,

Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-540. [Repealed]

Historical Notes

Derived from VR480-05-22.1 § 2.6, eff. September 25, 1991; repealed, Virginia Register 15, Issue 2, eff. November 11, 1998.

Part III

Coalbed Methane Gas Wells

4VAC25-150-550. Applicability, coalbed methane wells.

Part III of this chapter sets forth requirements unique to coalbed methane gas wells. Permittees must comply with the standards of general applicability in Part I of this chapter and with the standards for coalbed methane gas wells in this part.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 3.1, eff. September 25, 1991; amended, Virginia Register Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-560. Application for a permit, coalbed methane well operations.

In addition to the requirements of 4VAC25-150-80 or 4VAC25-150-110, every application for a permit or permit modification for a coalbed methane gas well shall contain:

1. An identification of the category of owner or operator, as listed in § 45.1-361.30 A of the Code of Virginia, that each person notified of the application belongs to;

2. The signed consent required in § 45.1-361.29 of the Code of Virginia;

3. Proof of conformance with any mine development plan in the vicinity of the proposed coalbed methane gas well, when the Virginia Gas and Oil Board has ordered such conformance;

4. The approximate depth to which the well is proposed to be drilled or deepened, or the actual depth if the well has been drilled;

5. The approximate depth and thickness, if applicable, of all known coal seams, known groundwater-bearing strata, and other known gas or oil strata between the surface and the depth to which the well is proposed to be drilled;

6. If casing or tubing is proposed to be or has been set, a description of the entire casing program, including the size of each string of pipe, the starting point and depth to which each string is to be or has been set, and the extent to which each string is to be or has been cemented together with any request for a variance under 4VAC25-150-580; and

7. The procedures to be followed to protect the safety of persons working in an underground coal mine for any coalbed methane well to be drilled within 200 feet of or into active workings. The permittee shall give notice of such drilling to the mine operator and the chief at least two working days prior to drilling.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 3.2, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Errata, 15:6 VA.R. 938 December 7, 1998; amended, Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-570. [Repealed]

Historical Notes

Derived from VR480-05-22.1 § 3.3, eff. September 25, 1991; repealed, Virginia Register Volume 15, Issue 2, eff. November 11, 1998.

4VAC25-150-580. Variance request to convert a vertical ventilation hole to a coalbed methane gas well.

A. An applicant may request a variance to the casing standards in 4VAC25-150-610 when the applicant desires to convert a vertical ventilation hole drilled prior to September 25, 1991, to a coalbed methane gas well. All other standards for coalbed methane gas wells shall be met. The variance request must be included in the request for a permit, and shall address the following subjects:

1. Method of wellbore completion, whether cased, open or cased/open hole;

2. Coal seams to be left uncased;

3. Mining activity currently being conducted within 750 feet of the location;

4. Depth of the water-protection string and information on how the casing was cemented; and

5. In the case of a coalbed methane gas well drilled through a coal seam from which the coal has been removed, the protection provided to prevent the escape of any gases into the mined out seam.

The production casing shall be tested to 300 psig surface pressure or the highest pressure anticipated to be placed on the casing, whichever is greater. If after 30 minutes, the pressure has dropped by 10% or more of the test pressure, corrective action shall be taken to ensure that the casing is so set and cemented that it will hold at least 90% of the test pressure for 30 minutes or more.

B. No variance to the casing standards in 4VAC25-150-610 shall be allowed for the conversion of any vertical ventilation hole drilled on or after September 25, 1991, to a coalbed methane gas well.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 3.4, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998.

4VAC25-150-590. Plats, coalbed methane wells.

A. In addition to the requirements of 4VAC25-150-90, every plat for a coalbed methane gas well shall show:

1. Boundaries and acreage of any drilling unit established by the board around the subject well;

2. Boundaries and acreage of the tract on which the well is located or is to be located;

3. Boundaries and acreage of all other tracts within one-half of the distance specified in § 45.1-361.17 of the Code of Virginia or within one-half of the distance to the nearest well completed in the same pool, whichever is less, or within the boundaries of a drilling unit established by the board around the subject well;

4. Surface owners on the tract to be drilled and on all other tracts within the unit where the surface of the earth is to be disturbed;

5. All gas, oil or royalty owners on any tract located within one-half of the distance specified in § 45.1-361.17 of the Code of Virginia or within one-half of the distance to the nearest well completed in the same pool, whichever is less, or within the boundaries of a drilling unit established by the board around the subject well;

6. Coal owners and mineral owners on the tract to be drilled and on all other tracts located within 750 feet of the subject well location;

7. Coal operators who have registered operations plans with the department for activities located on the tract to be drilled, or who have applied for or obtained a coal mine license, coal surface mine permit or a coal exploration notice or permit from the department with respect to all tracts within 750 feet of a proposed gas or oil well; and

8. Any inhabited building, highway, railroad, stream, permitted surface mine or permitted mine opening within 500 feet of the proposed well.

B. The well plat shall locate the well and two permanent points or landmarks with reference to the mine coordinate system if one has been established for the area of the well location, and shall show all other wells within the scope of the plat.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 3.5, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-600. Setback restrictions, coalbed methane wells.

No permit shall be issued for any well to be drilled closer than 200 feet from any inhabited building, unless site conditions as approved by the director warrant the permission of a lesser distance, and there exists a lease or agreement between the operator and the owner of the inhabited building. A copy of the lease or agreement shall accompany the application for a permit.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 3.6, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-610. Casing requirements for coalbed methane gas wells.

A. Water protection string.

1. Except as provided in subdivision A 5 of this section, the permittee shall set a water-protection string set to a point at least 300 feet below the surface or 50 feet below the deepest known groundwater horizon, whichever is deeper, circulated and cemented to the surface. If cement does not return to the surface, every reasonable effort shall be made to fill the annular space by introducing cement from the surface.

2. The operator shall test or require the cementing company to test the cement mixing water for pH and temperature prior to mixing the cement and to record the results on the cementing ticket.

3. After the cement is placed, the operator shall wait a minimum of eight hours and allow the cement to achieve a calculated compressive strength of 500 psi before drilling, unless the director approves a shorter period of time. The wait-on-cement (WOC) time shall be recorded within the records kept at the drilling rig while drilling is taking place.

4. When requested by the director, the operator shall submit copies of cement tickets or other documents that indicate the above specifications have been followed.

5. A coal-protection string may also serve as a water protection string.

B. Coal protection strings.

1. When any well penetrates coal seams that have not been mined out, the permittee shall, except as provided in subdivisions B 2 and B 3 of this section, set a coal-protection string. The coal-protection string shall exclude all fluids, oil, gas, and gas pressure, except that which is naturally present in each coal seam. The coal-protection string shall also exclude all injected material or disposed waste from the coal seams or the wellbore. The string of casing shall be set to a point at least 50 feet below the lowest coal seam, or as provided in subdivision B 3 of this section, and shall be circulated and cemented from that point to the surface, or to a point not less than 50 feet into the water-protection string or strings which are cemented to the surface.

2. For good cause shown, either before or after the permit is issued, when the procedure specified in subdivision B 1 is demonstrated by the permittee as not practical, the director may approve a casing program involving:

a. The cementing of a coal-protection string in multiple stages;

b. The cementing of two or more coal-protection strings; or

c. The use of other alternative casing procedures.

3. The director may approve the program, provided he is satisfied that the result will be operationally equivalent to compliance with the provisions of subdivision B 1 of this section for the purpose of permitting the subsequent safe mining through the well or otherwise protecting the coal seams as required by this section. In the use of multiple coal-protection strings, each string below the topmost string shall be cemented at least 50 feet into the next higher string or strings that are cemented to the surface and be verified by a cement top log.

4. Depth of coal-protection strings.

a. A coal-protection string shall be set to the top of the red shales in any area underlain by them unless, on a showing by the permittee in the permit application, the director has approved the casing point of the coal-protection string at some depth less than the top of the red shales. In such event, the permittee shall conduct a gamma-ray/density log survey on an expanded scale to verify whether the well penetrates any coal seam in the uncased interval between the bottom of the coal-protection string as approved and the top of the red shales.

b. If an unanticipated coal seam or seams are discovered in the uncased interval, the permittee shall report the discovery in writing to the director. The permittee shall cement the next string of casing, whether a part of the intermediate string or the production string, in the applicable manner provided in this section for coal-protection strings, from a point at least 50 feet below the lowest coal seam so discovered to a point at least 50 feet above the highest coal seam so discovered.

c. The gamma-ray/density log survey shall be filed with the director at the same time the driller's log is filed under 4VAC25-150-360.

d. When the director believes, after reviewing documentation submitted by the permittee, that the total drilling in any particular area has verified the deepest coal seam higher than the red shales, so that further gamma-ray/density logs on an expanded scale are superfluous for the area, he may waive the constructing of a coal-protection string or the conducting of such surveys deeper than 100 feet below the verified depth of the deepest coal seam.

C. Coal-protection strings of wells drilled prior to July 1, 1982. In the case of wells drilled prior to July 1, 1982, through coal seams without coal-protection strings as prescribed in subsection B of this section, the permittee shall retain such coal-protection strings as were set. During the life of the well, the permittee shall, consistent with a plan approved by the director, keep the annular spaces between the various strings of casing adjacent to coal seams open to the extent possible, and the top ends of all such strings shall be provided with casing heads, or such other approved devices as will permit the free passage of gas or oil and prevent filling of the annular spaces with dirt or debris.

D. Producing from more than one stratum. The casing program for any well designed or completed to produce from more than one stratum shall be designed in accordance with the appropriate standard practices of the industry.

E. Casing through voids.

1. When a well is drilled through a void, the hole shall be drilled at least 30 feet below the void. The annular space shall be cemented from the base of the casing up to the void, and every reasonable attempt shall be made to fill up the annular space from the top of the void to the surface; or it shall be cemented at least 50 feet into the next higher string or strings of casing that are cemented to the surface, and shall be verified by a cement top log.

2. For good cause shown, the director may approve alternate casing procedures proposed by the permittee, provided that the director is satisfied that the alternative casing procedures are operationally equivalent to the requirements imposed by subdivision E 1 of this section.

3. For good cause shown, the director may impose special requirements on the permittee to prevent communication between two or more voids.

F. A well penetrating a mine other than a coal mine. In the event that a permittee has requested to drill a well in such a location that it would penetrate any active mine other than a coal mine, the director shall approve the safety precautions to be followed by the permittee prior to the commencement of activity.

G. Production casing.

1. Unless otherwise granted in a variance from the director:

a. For coalbed methane gas wells with cased completions and cased/open hole completions, production casing shall be set and cemented from the bottom of the casing to the surface or to a point not less than 50 feet into the lowest coal-protection or water-protection string or strings

which are cemented to the surface.

b. For coalbed methane gas wells with open hole completions, the base of the casing shall be set to not more than 100 feet above the uppermost coalbed which is to be completed open hole. The casing shall be cemented from the bottom of the casing to the surface or to a point not less than 50 feet into the lowest coal-protection or water-protection string or strings which are cemented to the surface.

2. A coal-protection string may also serve as production casing.

H. Reporting of lost circulation zones. The permittee shall report to the director as soon as possible when an unanticipated void or groundwater horizon is encountered that results in lost circulation during drilling. The permittee shall take every necessary action to protect the lost circulation zone.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 3.7, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Errata, 15:6 VA.R. 938 December 7, 1998; amended, Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-620. Coalbed methane gas wellhead equipment.

Wellhead equipment and facilities installed on any gob well or on any coalbed methane gas well subject to the requirements of §§ 45.1-161.121 and 45.1-161.292 of the Code of Virginia addressing mining near or through a well shall include a safety precaution plan submitted to the director for approval. Such plans shall include, but shall not be limited to, flame arrestors, back-pressure systems, pressure-relief systems, vent systems and fire-fighting equipment. The director may require additional safety precautions or equipment to be installed on a case-by-case basis.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 3.8, eff. September 25, 1991; amended, Virginia Register Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-630. Report of produced waters, coalbed methane wells.

All coalbed methane gas well operators are required to submit monthly reports of total produced waters withdrawn from coalbed methane gas wells, in barrels, on a well-by-well basis, with the monthly report submitted under 4VAC25-150-210 of this chapter. The report shall show monthly produced water withdrawals and cumulative produced water withdrawals. Such reports shall be available for inspection upon request and maintained electronically or by hard copy until the well is abandoned and reclaimed.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 3.9, eff. September 25, 1991; amended, Virginia Register Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-640. [Repealed]

Historical Notes

Derived from VR480-05-22.1 § 3.10, eff. September 25, 1991; repealed, Virginia Register Volume 15, Issue 2, eff. November 11, 1998.

4VAC25-150-650. Conversion of a coalbed methane well to a vertical ventilation hole.

A permittee wishing to convert a coalbed methane gas well to a vertical ventilation hole shall first obtain approval from the Chief of the Division of Mines and submit a written request to the division for a permit release. The director shall consult with the chief, or his designated agent, before approving permit release.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 3.11, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

Part IV

Ground-Disturbing Geophysical Exploration

4VAC25-150-660. Applicability, ground-disturbing geophysical activity.

Part IV (4VAC25-150-660 et seq.) of this chapter sets forth requirements unique to ground-disturbing geophysical exploration.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 4.1, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-670. Application for a permit, geophysical activity or coreholes.

A. In accordance with 4VAC25-150-80 and 4VAC25-150-110, a permit shall be required for ground-disturbing geophysical exploration.

B. In addition to the requirements of 4VAC25-150-80 or 4VAC25-150-110, every application for a corehole permit or permit modification under this part shall contain:

1. The approximate depth to which the corehole is proposed to be drilled or deepened, or the actual depth if the corehole has been drilled;

2. The approximate depth and thickness, if applicable, of all known coal seams, known groundwater-bearing strata, and other known gas or oil strata between the surface and the depth to which the corehole is proposed to be drilled;

3. If casing is proposed to be set, the entire casing program, including the diameter of each string of casing, the starting point and depth to which each string is to be set, whether or not the casing is to remain in the hole after the completion of drilling, and the extent to which each string is to be cemented, if applicable;

4. A plan which shows the proposed manner of plugging or replugging the corehole; and

5. The procedures to be followed to protect the safety of persons working in an underground coal mine for any corehole to be drilled within 200 feet of or into active workings. The permittee shall give notice of such drilling to the mine operator and the chief at least two working days prior to drilling.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 4.2, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-680. Plats, coreholes.

A. In addition to the requirements of 4VAC25-150-90, every plat for a corehole shall show:

1. The boundaries of the tract on which the corehole is located or is to be located;

2. Surface owners on the tract to be drilled and surface owners on the tracts where the surface is to be disturbed;

3. Coal owners and mineral owners on the tract to be drilled;

4. Coal operators who have registered operations plans with the department for activities located on the tract to be drilled; and

5. Any inhabited building, highway, railroad, stream, permitted surface mine or permitted mine opening within 500 feet of the proposed corehole.

B. If the corehole location is underlain by known coal seams, the plat shall locate the corehole and two permanent points or landmarks with reference to the mine coordinate system if one has been established for the area of the corehole location, and shall in any event show all other wells within the scope of the plat.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 4.3, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-690. Operations plans, coreholes.

In addition to the requirements of 4VAC25-150-100, every operations plan for a corehole shall describe the measures to be followed to protect water quality during the drilling, and the measures to be followed to protect any voids encountered during drilling.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 4.4, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Errata, 15:6 VA.R. 938 December 7, 1998; amended, Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-700. Setback restrictions, coreholes.

No permit shall be issued for any corehole to be drilled closer than 200 feet from an inhabited building, unless site conditions as approved by the director warrant the permission of a lesser distance, and there exists a lease or agreement between the operator and the owner of the inhabited building. A copy of the lease or agreement shall accompany the application for a permit.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 4.5, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-710. [Repealed]

Historical Notes

Derived from VR480-05-22.1 § 4.6, eff. September 25, 1991; repealed, Virginia Register Volume 15, Issue 2, eff. November 11, 1998.

4VAC25-150-711. Voids and lost circulation zones.

A. Casing through voids.

1. When a corehole is drilled through a void, the hole shall be drilled at least 30 feet below the void. The annular space shall be cemented from the base of the casing up to the void and every reasonable attempt shall be made to fill the annular space from the top of the void to the surface; or it shall be cemented at least 50 feet into the next higher string or strings of casing that are cemented to the surface and be verified by a cement top log.

2. For good cause shown, the director may approve alternate casing procedures proposed by the permittee, provided that the director is satisfied that the alternative casing procedures are operationally equivalent to the requirements imposed by this section.

3. For good cause shown, the director may impose special requirements on the permittee to prevent communication between two or more voids.

B. Reporting of lost circulation zones. The permittee shall report to the director as soon as possible when an unanticipated void or groundwater horizon is encountered that results in lost circulation during drilling. The permittee shall take every necessary action to protect the lost circulation zone.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from Virginia Register Volume 15, Issue 2, eff. November 11, 1998; amended, Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

Part V

Gathering Pipelines

4VAC25-150-720. Applicability, gathering pipelines.

A. Part V (4VAC25-150-720 et seq.) of this chapter sets forth requirements unique to gathering pipelines. Permittees must comply with the standards for gathering pipelines in this part and the following standards in Part I:

1. All of Article 1, "General Information"; except 4VAC25-150-50, "Gas or oil in holes not permitted as a gas or oil well";

2. All of Article 2, "Permitting"; except 4VAC25-150-90, "Plats";

3. All of the sections in Article 3, "Enforcement";

4. 4VAC25-150-220, "Annual reports," of Article 4, "Reporting";

5. 4VAC25-150-230, 4VAC25-150-240, 4VAC25-150-250, 4VAC25-150-260, 4VAC25-150-270, 4VAC25-150-310, 4VAC25-150-350, 4VAC25-150-380, 4VAC25-150-410, 4VAC25-150-420, and 4VAC25-150-430 of Article 5, "Technical Standards"; and

6. 4VAC25-150-470, "Release of bond," of Article 6, "Plugging and Abandonment."

B. A permit shall be required for installation and operation of every gathering pipeline and associated structures for the movement of gas or oil production from the wellhead to a previously permitted gathering line, a transmission or other line regulated by the United States Department of Transportation or the State Corporation Commission, to the first point of sale, or for oil, to a temporary storage facility for future transportation by a method other than a gathering pipeline.

C. Each gathering pipeline or gathering pipeline system may be permitted separately from gas or oil wells or may be included in the permit for the well being served by the pipeline.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 5.1, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff.

October 10, 2013.

4VAC25-150-730. General requirements for gathering pipelines.

A. Gathering pipelines shall be installed to be compatible with other uses of the area.

B. No permit shall be issued for a gathering pipeline to be installed closer than 100 feet from any inhabited building or railway, unless site conditions as approved by the director warrant the use of a lesser distance and there exists a lease or agreement between the operator and the owner of the inhabited building or railway. A copy of the lease or agreement shall accompany the application for a permit.

C. Materials used in gathering pipelines shall be able to withstand anticipated conditions. At a minimum this shall include:

1. All plastic gathering pipeline connections shall be fused, not coupled.

2. All buried gathering pipelines shall be detectable by magnetic or other remote means from the surface.

D. All new gathering pipelines shall be tested to maintain a minimum of 110% of anticipated pressure prior to being placed into service.

E. All gathering pipelines shall be maintained in good operating condition at all times.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 5.2, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-740. Operations plans for gathering pipelines.

A. For a gathering pipeline, the operations plan shall be in a format approved by, or on a form prescribed by, the director.

B. On a form prescribed by the director, the operator shall indicate how risks to the public safety or to the site and adjacent lands are to be managed, and shall provide a short narrative, if pertinent.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 5.3, eff. September 25, 1991; amended, Virginia Register Volume 15, Issue 2, eff. November 11, 1998; Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

4VAC25-150-750. Inspections for gathering pipelines.

Gathering pipelines shall be visually inspected annually by the permittee. The results of each annual inspection shall be maintained by the permittee for a minimum of three years and be submitted to the director upon request.

Statutory Authority

§§ 45.1-161.3 and 45.1-361.27 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.1 § 5.4, eff. September 25, 1991; amended, Virginia Register Volume 29, Issue 3, eff. November 8, 2012; Volume 30, Issue 1, eff. October 10, 2013.

FORMS (4VAC25-150)

Registration Form, DGO-GO-A (rev. 6/09).

Application for a New Permit, Permit Modification, or Transfer of Permit Rights, DGO-GO-1 (rev. 6/09).

Operator's Surety Bond, DGO-GO-2 (rev. 6/09).

Operator's Cash Bond, DGO-GO-3 (rev. 6/09).

Notice of Application for a Permit or Permit Modification, DGO-GO-4 (rev. 6/09).

Persons Receiving Official Notice of Permit Application or Permit Modification, DGO-GO-5 (rev. 6/09).

Notice by Publication of an Application for a Permit, DGO-GO-6 (rev. 6/09).

Well Location Plat, DGO-GO-7, rev. 1/98.

Information Sheet for Applications to Transfer Permit Rights, DGO-GO-8 (rev. 6/09).

Technical Data Sheet for Permit Applications Under § 45.1-361.29, DGO-GO-9 (rev. 6/09).

Technical Data Sheet for Gathering Pipelines and Associated Facilities, DGO-GO-10 (rev. 6/09).

Technical Data Sheet for Permit Modification to Plug or Replug, DGO-GO-11 (rev. 6/09).

Operations Plan -- Checklist, DGO-GO-12 (rev. 6/09).

Drilling Report, DGO-GO-14 (rev. 6/09).

Completion Report, DGO-GO-15 (rev. 6/09).

Application for Disposal of Pit or Produced Fluids, DGO-GO-16 (rev. 6/09).

Application to Complete Abandoned Gas or Oil Well as a Water Well, DGO-GO-17 (rev. 6/09).

Plugging Affidavit, DGO-GO-18 (rev. 6/09).

Monthly Gas Production Report, DGO-GO-19 (rev. 6/09).

Monthly Oil Production, DGO-GO-20 (rev. 6/09).

Notice of Right to Object, DGO-GO-21 (rev. 6/09).

License to Perform -- Plugging of Orphaned Well, DGO-GO-23 (rev. 6/09).

License to Perform -- Plugging of Well/Bond Forfeiture, DGO-GO-24 (rev. 6/09).

Affidavit and Release in Support of Surface Owner's Application to the Virginia Division of Gas and Oil

for Use of an Orphaned Well as a Water Well, DGO-GO-25 (rev. 6/09).

CHAPTER 160

VIRGINIA GAS AND OIL BOARD REGULATIONS

4VAC25-160-10. Definitions.

The following words and terms when used in this chapter shall have the following meanings unless the context clearly indicates otherwise:

"Act" means the Virginia Gas and Oil Act of 1990, Chapter 22.1 (§ 45.1-361.1 et seq.) of Title 45.1 of the Code of Virginia.

"Applicant" means a person or business who files an application, petition, appeal or other request with the Division of Gas and Oil.

"Board" means the Virginia Gas and Oil Board.

"Complete application" means all the materials required to be filed by the applicant under this chapter.

"Department" means the Department of Mines, Minerals and Energy.

"Director" means the Director of the Department of Mines, Minerals and Energy or his authorized agent.

"Directional survey" means a well survey that measures the degree of deviation of a hole, or distance, from the vertical and the direction of departure.

"Division" means the Division of Gas and Oil of the Department of Mines, Minerals and Energy.

"Division director" means the Director of the Division of Gas and Oil.

"Election" means the performance of an act within the time established or required by statute, order or regulation. An election required to be made by board order or regulation must be in writing and (i) be personally delivered to the person or agent of the person described in the order or regulation by the date established or required, or (ii) be mailed to the person or agent of the person described in the order or regulation at the address stated therein and be postmarked by the United States Postal Service before midnight on the date established or required.

"Field" means the general area underlain by one or more pools.

"Gas/oil ratio" means the product of the number of Mcf of natural gas produced from a well divided by the number of barrels of oil produced from the well as determined by a gas/oil ratio test.

"Gas well" means any well which produces or appears capable of producing a ratio of 6,000 cubic feet (6 Mcf) of gas or more to each barrel of oil, on the basis of a gas-oil ratio test.

"Inclination survey" means a well survey to determine the deviation, using the surface location of the well as the apex, of a well bore from the true vertical beneath the apex on the same horizontal subsurface plane.

"Mcf" means, when used with reference to natural gas, 1,000 cubic feet of gas at a pressure base of 14.73 pounds per square inch gauge and a temperature base of 60°F.

"Mine development plan" means a permit or license application filed with the Division of Mines or Mined Land Reclamation for legal permission to engage in extraction of coal resources.

"Oil well" means any well which produces or appears capable of producing a ratio of less than 6,000 cubic feet (6 Mcf) of gas to each barrel of oil, on the basis of a gas-oil ratio test.

"Petitioner" means any person or business who files a petition, appeal, or other request for action with the Division of Gas and Oil or the Virginia Gas and Oil Board.

"Pooling" means the combining of all interests or estates in a gas, oil or coalbed methane drilling unit for the development and operations thereof. Pooling may be accomplished either through voluntary agreement or through a compulsory order of the board.

"Respondent" means a person named in an application, petition, appeal or other request for board action and against whom relief is sought by the applicant, or a person who under the terms of a board order, is required to make an election.

"Unit operator" means the gas or oil owner designated by the board to operate in or on a pooled unit.

Statutory Authority

§ 45.1-361.15 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.2 § 1, eff. October 23, 1991; amended, Virginia Register Volume 13, Issue 22, eff. August 20, 1997; Volume 29, Issue 3, eff. November 8, 2012.

4VAC25-160-20. Authority and applicability.

A. This chapter is promulgated by the Virginia Gas and Oil board pursuant to § 45.1-361.15 of the Code of Virginia.

B. As provided for in the Virginia Acts of Assembly, 1990, Chapter 92, all field rules and orders issued pursuant to the provisions of the Oil and Gas Act of 1982, Chapter 22 (§ 45.1- 286 et seq.) of Title 45.1 of the Code of Virginia shall remain in force and effect until modified or revoked pursuant to the provisions of the Gas and Oil Act of 1990, Chapter 22.1 (§ 45.1-361.1 et seq.) of Title 45.1 of the Code of Virginia. The requirements of this chapter are in addition to requirements of field rules and orders.

Statutory Authority

§ 45.1-361.15 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.2 § 2, eff. October 23, 1991; amended, Virginia Register Volume 13, Issue 22, eff. August 20, 1997.

4VAC25-160-30. Administrative provisions.

A. The Virginia Gas and Oil Board shall meet on the third Tuesday of each calendar month unless no action is required by the board or unless otherwise scheduled by the board. All hearings shall be scheduled in accordance with the requirements for notice by publication in § 45.1-361.19 of the Code of Virginia. Except where otherwise established by the Act, the board may establish deadlines for filing materials for meetings or hearings scheduled on other than the third Tuesday of each month.

B. Applications to the board must be filed by the following deadlines:

1. All applications, petitions, appeals or other requests for board action must be received by the division at least 30 calendar days prior to the regularly scheduled meeting of the board. If the 30th day falls on a weekend or a legal holiday, the deadline shall be the prior business day.

2. When required, two copies of the following material must be filed with the division at least seven calendar days prior to the regularly scheduled meeting of the board in order for the application to be considered a complete application:

a. The affidavit demonstrating that due diligence was used to locate and serve persons in accordance with § 45.1-361.19 of the Code of Virginia and 4VAC25-160-40; and

b. Proof of notice by publication in accordance with 4VAC25-160-40 D.

C. A complete application that is not filed by the deadlines of this subsection shall be carried over to the next scheduled meeting of the board. A submission that does not contain a complete application shall not be considered by the board until the application is complete.

D. The division shall assign a docket number to each application or petition at the time of payment receipt and filing. The division shall notify the applicant of the completed filing and assigned docket number. The docket number shall be referenced when submitting material regarding the application or petition.

E. In addition to the other requirements of this chapter, applications to the board shall meet the following standards:

1. Each application for a hearing before the board shall be headed by a caption which shall contain a heading including:

a. "Before the Virginia Gas and Oil Board";

b. The name of the applicant;

c. The relief sought; and

d. The docket number assigned by the division.

2. Each application shall be signed by the applicant, an authorized agent of the applicant, or an attorney for the applicant, certifying that, "The foregoing application to the best of my knowledge, information, and belief is true and correct."

3. Exhibits shall be identified by the docket number and an exhibit number and may be introduced as part of a person's presentation.

4. Applicants shall submit eight sets of each application and exhibits. Each person offering exhibits into evidence shall also have available a reasonably sufficient number of exhibits for other persons who are subject to the provisions of §§ 45.1-361.19 and 45.1-361.23 of the Code of Virginia, who have notified the division of their request for copies of exhibits, and are expected to be in attendance at the hearing.

F. Applications for the establishment and modification of a unit, spacing or pooling shall be accompanied by a $130 nonrefundable fee, payable to the Treasurer of Virginia.

G. All parties in any proceeding before the board are entitled to appear in person or be represented by counsel, as provided for in the Administrative Process Act, § 2.2-4000 et seq. of the Code of Virginia.

Statutory Authority

§ 45.1-361.15 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.2 § 3, eff. October 23, 1991; amended, Virginia Register Volume 13, Issue 22, eff. August 20, 1997; Volume 19, Issue 18, eff. July 1, 2003; Volume 29, Issue 3, eff. November 8, 2012.

4VAC25-160-40. Notice of hearings.

A. Each applicant for a hearing to establish an exception to statewide spacing under § 45.1-361.17 of the Code of Virginia shall provide notice by certified mail, return receipt requested, to all gas, oil, coal or mineral owners having an interest underlying any tract located within the distances provided in § 45.1-361.17 of the Code of Virginia or the distance to the nearest well completed in the same pool, whichever is less. Each applicant for a hearing to establish an exception to a well location provided for in a drilling unit established by an order of the board shall provide notice by certified mail, return receipt requested, to all gas, oil, coal or mineral owners having an interest underlying the unit where the exception is requested.

B. Each applicant shall include, in or with the mailed notice of the hearing required under § 45.1-361.19 of the Code of Virginia, the following information:

1. The name and address of the applicant and the applicant's counsel, if any;

2. In the case of an application to vacate or amend an order, identification of the order to be vacated or amended;

3. A statement of the relief sought and proposed provisions of the order or proposed order;

4. Citations of statutes, rules, orders and decided cases supporting the relief sought;

5. A statement of the type of well or wells (gas, oil or coalbed methane gas);

6. a. For a pooling order, the notice should include: a plat showing the size and shape of the proposed unit and boundaries of tracts within the unit. The location of the proposed unit shall be shown in accordance with the Virginia Coordinate System of 1983, as defined in Chapter 17 (§ 55-287 et seq.) of Title 55 of the Code of Virginia, also known as the State Plane Coordinate System. The plat shall include property lines taken from (i) deed descriptions and chain of title, (ii) county courthouse records, or (iii) a physical survey for each land track in the unit. The location of the well and the percentage of acreage in each tract in the unit shall be certified by a licensed land surveyor or a licensed professional engineer and attested by the applicant as to its conformity to existing orders issued by the board;

b. For a field rule, the notice should include: a description of the pool or pools in the field, the

boundaries of the field, information on the acreage and boundaries of the units proposed to be in the field and any proposed allowable production rates; or

c. For a location exception, the notice should include: a description of the proposed well location in relation to other wells within statewide spacing limits or in relation to the allowable area for drilling within a unit;

7. A description of the interest or claim of the respondent being notified;

8. A description of the formation or formations to be produced;

9. An estimate of the amount of reserves of the unit;

10. An estimate of the allowable costs in accordance with 4VAC25-160-100; and

11. How interested persons may obtain additional information or a complete copy of the application.

C. When after a diligent search the identity or location of any person to whom notice is required to be given in accordance with subsection A or B of this section is unknown at the time the applicant applies for a hearing before the board, the applicant for the hearing shall cause a notice to be published in a newspaper of general circulation in the county, counties, city, or cities where the land or the major portion thereof which is the subject of the application is located. The notice shall include:

1. The name and address of the applicant;

2. A description of the action to be considered by the board;

3. A map showing the general location of the area that would be affected by the proposed action and a description that clearly describes the location or boundaries of the area that would be affected by the proposed action sufficient to enable local residents to identify the area;

4. The date, time and location of the hearing at which the application is scheduled to be heard; and

5. How interested persons may obtain additional information or a complete copy of the application.

D. Notice of a hearing made in accordance with § 45.1-361.19 of the Code of Virginia or this section shall be sufficient, and no additional notice is required to be made by the applicant upon a postponement or continuance of the hearing.

E. Each applicant for a hearing to modify an order established under § 45.1-361.21 or § 45.1-361.22 of the Code of Virginia shall provide notice in accordance with § 45.1-361.19 of the Code of Virginia to each

person having an interest underlying the tract or tracts to be affected by the proposed modification.

F. An applicant filing a petition to modify a forced pooling order established under § 45.1-361.21 or § 45.1-361.22 of the Code of Virginia to change the unit operator based on a change in the corporate name of the unit operator; a change in the corporate structure of the unit operator; or a transfer of the unit operator's interests to any single subsidiary, parent or successor by merger or consolidation is not required to provide notice. Other applicants for a hearing to modify a forced pooling order shall provide notice in accordance with § 45.1-361.19 of the Code of Virginia to each respondent named in the order to be modified whose interest may be affected by the proposed modification.

Statutory Authority

§ 45.1-361.15 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.2 § 4, eff. October 23, 1991; amended, Virginia Register Volume 13, Issue 22, eff. August 20, 1997; Volume 29, Issue 3, eff. November 8, 2012.

4VAC25-160-50. Applications for field rules.

Each application filed under § 45.1-361.20 of the Code of Virginia to establish or modify a field rule, a drilling unit or drilling units shall contain:

1. The name and address of the applicant and the applicant's counsel, if any;

2. In the case of an application to vacate or amend an order, identification of the order to be vacated or amended;

3. A statement of the relief sought and the proposed provisions of the order or a proposed order;

4. Citations of statutes, rules, orders, and decided cases supporting the relief sought;

5. In the case where a field rule is proposed to be established or modified:

a. A statement of the type of field (gas, oil or coalbed methane gas);

b. A description of the proposed formation or formations subject to the petition; and

c. A description of the pool or pools included in the field, based on geological and technical data, including the boundaries of the pool or pools and field, shown in accordance with the Virginia Coordinate System of 1983, as defined in Chapter 17 (§ 55-287 et seq.) of Title 55 of the Code of Virginia, also known as the State Plane Coordinate System;

6. In the case where a drilling unit or units are proposed to be established or modified:

a. A statement of the acreage to be embraced within each drilling unit;

b. A description of the formation or formations to be produced by the well or wells in the unit or units; and

c. The boundaries of the drilling unit or units shown in accordance with subdivision 5 c of this section;

7. A statement of the amount of acreage to be included in the order;

8. A statement of the proposed allowable production rate or rates and supporting documentation, if applicable;

9. Evidence that any proposal to establish or modify a unit or units for coalbed methane gas will meet the requirements of § 45.1-361.20 C of the Code of Virginia;

10. An affidavit demonstrating that due diligence was used to locate and serve persons in accordance with § 45.1-361.19 of the Code of Virginia and 4VAC25-160-40; and

11. When required, proof of notice by publication in accordance with 4VAC25-160-40 C.

Statutory Authority

§ 45.1-361.15 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.2 § 5, eff. October 23, 1991; amended, Virginia Register Volume 13, Issue 22, eff. August 20, 1997; Volume 29, Issue 3, eff. November 8, 2012.

4VAC25-160-60. Applications for exceptions to minimum well spacing requirements.

Applications for an exception to statewide spacing under § 45.1-361.17 of the Code of Virginia or under a field rule issued by the board shall contain the following:

1. The name and address of the applicant and the applicant's counsel, if any;

2. In the case of an application for an exception to spacing established in a field rule, identification of the order governing spacing in the field;

3. A statement of the proposed location of the well in relation to wells permitted or for which a permit application is pending before the Division of Gas and Oil at the time of filing within the distances prescribed in § 45.1-361.17 of the Code of Virginia;

4. A description of the formation or formations to be produced by the well proposed for alternative spacing and the wells identified in subdivision 3 of this section;

5. A description of the conditions justifying the alternative spacing;

6. An affidavit demonstrating that due diligence was used to locate and serve persons in accordance with 4VAC25-160-40; and

7. When required, proof of notice by publication in accordance with 4VAC25-160-40 C.

Statutory Authority

§ 45.1-361.15 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.2 § 6, eff. October 23, 1991; amended, Virginia Register Volume 13, Issue 22, eff. August 20, 1997; Volume 29, Issue 3, eff. November 8, 2012.

4VAC25-160-70. Applications to pool interests in a drilling unit: conventional gas or oil or no conflicting claims to coalbed methane gas ownership.

A. Applications filed under § 45.1-361.21 of the Code of Virginia to pool interests in a drilling unit for conventional gas or oil or for coalbed methane gas where there are no conflicting claims to ownership of the coalbed methane gas, except as provided for in subsection B of this section, shall contain the following:

1. The name and address of the applicant and the applicant's counsel, if any;

2. In the case of an application to vacate or amend an order, identification of the order to be vacated or amended;

3. A statement of the relief sought and proposed provisions of the order or a proposed order;

4. Citations of statutes, rules, orders, and decided cases supporting the relief sought;

5. A statement of the type of well or wells (gas, oil or coalbed methane gas);

6. The permit number or numbers, if any have been issued;

7. A plat showing the size and shape of the proposed unit and boundaries of tracts within the unit, shown in accordance with the Virginia Coordinate System of 1983, as defined in Chapter 17 (§ 55-287 et seq.) of Title 55 of the Code of Virginia, also known as the State Plane Coordinate System. Also included shall be the names of owners of record of the tracts, and the percentage of acreage in each tract, certified by a licensed land surveyor or a licensed professional engineer and attested by the applicant as to its conformity to existing orders issued by the board;

8. A description of the status of interests to be pooled in the unit at the time the application is filed;

9. For an application to pool a coalbed methane gas unit, a statement of the percentage of the total interest held by the applicant in the proposed unit at the time the application for the hearing is filed;

10. A statement of the names of owners and the percentage of interests to be escrowed under § 45.1-361.21 D of the Code of Virginia for each owner whose location is unknown at the time the application for the hearing is filed;

11. A description of the formation or formations to be produced;

12. An estimate of production over the life of well or wells, and, if different, an estimate of the recoverable reserves of the unit;

13. An estimate of the allowable costs in accordance with 4VAC25-160-100;

14. An affidavit demonstrating that due diligence was used to locate and serve persons in accordance with § 45.1-361.19 of the Code of Virginia and 4VAC25-160-40 C; and

15. When required, proof of notice by publication in accordance with 4VAC25-160-40 C.

B. Applications to amend an order pooling interests in a drilling unit may be filed by written stipulation of all persons affected. The application is not required to contain the information specified in subsection A of this section, but shall contain the proposed amended language to the order, shown by interlineation.

C. Within 45 days after the time for election provided in any pooling order has expired, the unit operator shall file an affidavit with the board stating whether or not any elections were made. If any elections were made, the affidavit shall name each respondent making an election and describe the election made. The affidavit shall state if no elections were made or if any response was untimely. The affidavit shall be accompanied by a proposed supplemental order to be made and recorded to complete the record regarding elections. The affidavit and proposed supplemental order shall be filed by the unit operator within 45 days of the last day on which a timely election could have been delivered or mailed, or within 45 days of the last date for payment set forth in the pooling order, whichever occurs last. The applicant shall mail a true and correct copy of any supplemental order to all persons identified in the supplemental order.

Statutory Authority

§ 45.1-361.15 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.2 § 7, eff. October 23, 1991; amended, Virginia Register Volume 13, Issue 22, eff. August 20, 1997; Volume 29, Issue 3, eff. November 8, 2012.

4VAC25-160-80. Applications to pool interests in a drilling unit: conflicting claims to coalbed methane gas ownership.

In addition to the information required in 4VAC25-160-70 of this chapter, applications filed under § 45.1-361.22 of the Code of Virginia to pool interests in a drilling unit for coalbed methane gas where there are conflicting claims to ownership of the coalbed methane gas shall contain a description of the conflicting ownership claims and the percentage of interests to be escrowed for the conflicting claims, and a plan for escrowing the costs of drilling and operating the well or wells and the proceeds from the well or wells attributable to the conflicting interests.

Statutory Authority

§ 45.1-361.15 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.2 § 8, eff. October 23, 1991.

4VAC25-160-90. Standards for escrow accounts.

Payment of funds into escrow accounts shall be made in accordance with the standards established in each order of the board requiring such payment. In addition, the unit operator of a drilling unit subject to a voluntary pooling agreement may petition the board under 4VAC25-160-140 of this chapter for an order authorizing the escrow of funds subject to conflicting claims in accordance with board standards or regulations regarding escrow of such funds in units subject to a compulsory pooling order.

Statutory Authority

§ 45.1-361.15 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.2 § 9, eff. October 23, 1991.

4VAC25-160-100. Allowable cost which may be shared in pooled gas or oil operations.

A. The unit operator of a pooled unit may share all reasonable costs of operating the unit, including a reasonable supervision fee, with other participating and nonparticipating operators, as provided for in § 45.1-361.21 of the Code of Virginia, which may include:

1. Direct costs:

a. Ecological and environmental;

b. Rentals and royalties;

c. Labor;

d. Employee benefits;

e. Material;

f. Transportation;

g. Services;

h. Equipment and facilities furnished by the unit operator;

i. Damages and losses to joint property;

j. Legal expenses;

k. Taxes;

l. Insurance;

m. Abandonment and reclamation;

n. Communications; and

o. Other expenditures.

2. Indirect charges:

a. Drilling and production operations;

b. Major construction; and

c. Catastrophe.

B. Where there are conflicting royalty claims to coalbed methane gas, the unit operator of a forced pooled coalbed methane gas unit shall deposit proceeds in accordance with § 45.1-361.22 of the Code of

Virginia, to be determined at the wellhead.

C. Where there are conflicting claims and one or more persons have elected to become participating or nonparticipating operators, the unit operator of a forced pooled coalbed methane gas unit shall escrow net proceeds after deduction for royalty and other costs consistent with the terms of this chapter and the board's order regarding the unit.

D. In any dispute which may arise regarding a unit operator's costs, the unit operator shall be entitled to the benefit of a presumption of reasonableness where it is shown that the types of costs being disputed are, by custom and practice, customary and usual within the industry. The unit operator shall not be entitled to a presumption of reasonableness of the amount of the costs being disputed.

E. Unless one or more respondents elect to participate or elect to be a nonparticipating operator on a carried basis, the unit operator shall have no obligation to report costs after the expiration of the election period.

Statutory Authority

§ 45.1-361.15 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.2 § 10, eff. October 23, 1991; amended, Virginia Register Volume 13, Issue 22, eff. August 20, 1997.

4VAC25-160-110. Recordkeeping.

A. Each unit operator shall maintain records of production, income, payments made to lessors and escrow agents, any suspended payments, and other information prescribed by the board until the later of:

1. When the permits for all wells in the unit have been released by the department;

2. Twenty-four months after all escrowed funds for competing claims to ownership of coalbed methane gas in the unit have been paid out under order of the board; or

3. When so ordered by the board.

B. Each unit operator shall maintain itemized records of all costs charged to participating or nonparticipating operators until the later of:

1. Twenty-four months after all costs attributable to participating or nonparticipating operators have been settled and paid; or

2. When so ordered by the board.

C. Upon transfer of the right to conduct operations in a pooled drilling unit to a new unit operator, the old unit operator shall transfer all records required to be maintained in accordance with this section to the new unit operator. The old unit operator will not be released from responsibility as the unit operator until he has submitted, to the board, evidence that the records have been received by the new unit operator.

D. In the event a unit operator wishes to terminate its legal existence and the unit is not transferred to a new unit operator, or when the permit for any well in the unit has been revoked and the bond forfeited by the department, the unit operator shall transfer, to the board, all records required to be maintained in accordance with this section.

Statutory Authority

§ 45.1-361.15 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.2 § 11, eff. October 23, 1991; amended, Virginia Register Volume 13, Issue 22, eff. August 20, 1997.

4VAC25-160-120. Applications to change the unit operator for a unit established by order of the board.

A. Transfer of the right to operate a unit established by the board must be approved by the board prior to the transfer of unit operations to a new operator.

1. For a voluntary transfer, the proposed new unit operator shall file written notification of the proposed transfer of operations.

2. An involuntary transfer may be requested by an applicant or considered by the board on its own motion if the unit operator has not continued gas or oil operations of the unit with due diligence, or the permit for any well in the unit has been revoked by the department.

B. The request for a transfer shall include:

1. The name and address of the existing unit operator;

2. The name and address of the proposed new unit operator;

3. Written approval from the existing unit operator, or a detailed statement of the facts supporting the removal of the existing operator; and

4. Identification of the order to be amended.

C. The notice of the board hearing shall be provided under § 45.1-361.19 B of the Code of Virginia.

Statutory Authority

§ 45.1-361.15 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.2 § 12, eff. October 23, 1991; amended, Virginia Register Volume 13, Issue 22, eff. August 20, 1997.

4VAC25-160-130. Appeals of the director's decisions.

A. Appeals of the division director's decisions shall be filed in writing, at the office of the division, in accordance with §§ 45.1-361.23 and 45.1-361.36 of the Code of Virginia.

B. A petition to appeal a decision of the division director shall contain:

1. The name and address of the petitioner and the petitioner's counsel, if any;

2. Identification of the decision being appealed, and the date the decision was issued;

3. A statement identifying the standing of the petitioner to appeal;

4. A statement setting forth the reasons for the appeal, including errors alleged in the director's decision and the reasons why the decision is deemed contrary to law or regulation;

5. A statement that the issues on appeal were in fact raised as required by § 45.1-361.36 B of the Code of Virginia;

6. A statement setting forth the specific relief requested; and

7. When a stay to any proposed activity allowed as a result of the director's decision is desired, a request for the stay and the basis for granting the stay.

C. Upon receipt of an appeal containing a request for a stay, the division director shall decide on the request in accordance with § 45.1-361.23 D of the Code of Virginia.

Statutory Authority

§ 45.1-361.15 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.2 § 13, eff. October 23, 1991; amended, Virginia Register Volume 13, Issue 22, eff. August 20, 1997; Volume 29, Issue 3, eff. November 8, 2012.

4VAC25-160-140. Miscellaneous petitions to the board.

A. Any petition to the board not otherwise provided for in this chapter shall be made in writing, and shall contain:

1. The name and address of the petitioner and the petitioner's counsel, if any;

2. The names and addresses of any persons who are named as respondents in the petition;

3. An affidavit that notice has been given to each respondent, if any, named in the petition;

4. A statement of the issues of the petition; and

5. A statement setting forth the specific relief requested.

B. If a petitioner for a unit under § 45.1-361.21 or § 45.1-361.22 fails to provide notification to an owner of interest of any part of a unit subject to a petition before the board, then such party may file a written objection to the proceedings in the form of a petition as set out in subsection A of this section. Such petition does not require the submission of an application fee as required in 4VAC25-160-30 F.

Statutory Authority

§ 45.1-361.15 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.2 § 14, eff. October 23, 1991; amended, Virginia Register Volume 13, Issue 22, eff. August 20, 1997.

4VAC25-160-150. Effective dates for and enforcement of board orders.

A. All orders issued by the board under § 45.1-361.20 of the Code of Virginia shall remain in effect until vacated or amended by the board on its own motion or on application from an owner or operator in the field or unit subject to the order.

B. Unless otherwise provided in the board order, all orders issued by the board under §§ 45.1-361.21 and 45.1-361.22 of the Code of Virginia shall remain in effect:

1. For a period of two years from the date of issuance of the board order;

2. If a permit has been issued for a well in a unit subject to the order, until the permit or permits have expired or been released on the well or wells; or

3. Until vacated or amended by the board on its own motion or on application.

C. In the event that an appeal is taken from any order of the board, the time between the filing of the petition for appeal and the final order of the circuit court shall be excluded in calculating the time period as contained in subsection B of this section.

D. All orders of the board shall be enforced by the director pursuant to the process set out in this chapter and § 45.1-361.24 of the Code of Virginia.

Statutory Authority

§ 45.1-361.15 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.2 § 15, eff. October 23, 1991; amended, Virginia Register Volume 13, Issue 22, eff. August 20, 1997.

4VAC25-160-160 to 4VAC25-160-180. [Repealed]

Historical Notes

Derived from VR480-05-22.2 §§ 16 to 18, eff. October 23, 1991; repealed, Virginia Register Volume 13, Issue 22, eff. August 20, 1997.

4VAC25-160-190. Civil charges.

A. Civil charges shall be provided for in accordance with § 45.1-361.8 C of the Code of Virginia.

B. The division director, after finding any violation of the Act, a regulation promulgated under the Act, or order of the director or board, or upon direction from the board, may recommend a civil charge against a gas, oil or geophysical operator and shall base the recommendation on the Civil Charge Calculation Procedure established by order of the board.

Statutory Authority

§ 45.1-361.15 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.2 § 19, eff. October 23, 1991; amended, Virginia Register Volume 29, Issue 3, eff. November 8, 2012.

4VAC25-160-200. Surveys and tests.

A. Deviation tests.

1. An inclination survey shall be made on all rotary drilled wells located in accordance with a field rule established by the board. An inclination survey is not required for wells drilled in accordance with the distance limitations of § 45.1-361.17 of the Code of Virginia.

2. The first shot point shall be at a depth not greater than the bottom of the surface casing or, for a well drilled through a coal seam, at a depth not greater than that of the bottom of the coal protection string. Succeeding shot points shall be no more than 1,000 feet apart, or as otherwise ordered by the director.

3. Inclination surveys conforming to these requirements may be made either during the normal course of drilling or after the well has reached total depth. Survey data shall be certified in writing as being true and correct by the designated agent or person in charge of a permittee's Virginia operations, or the drilling contractor, and shall indicate the resultant lateral deviation as the maximum calculated lateral displacement determined at any inclination survey point in a horizon approved for production, by an order of the board or a permit approved by the director, assuming that all displacement occurs in the direction of the nearest boundary of the unit. The resultant lateral deviation shall be recorded on the drilling or completion report filed by the permittee.

4. If a directional survey determining the location of the bottom of the hole is filed upon completion of the well, it shall not be necessary to file the inclination survey data.

5. A directional survey shall be made when:

a. A well is directionally controlled and is thereby intentionally deflected from vertical;

b. The resultant lateral deviation of any well, calculated from inclination survey data, is greater than the distance from the center of the surface location of the well bore to the nearest boundary of the area where drilling is allowed in a unit established by the board; or

c. A well is drilled as an exception location and a directional survey is ordered by the board.

6. The board or the director, on their own initiative or at the request of a gas or oil owner on a contiguous unit or tract, may require the permittee drilling any well to make a directional survey of

the well if there is reasonable cause therefor. Whenever a survey is required by the board or the director at the request of a contiguous owner and the permittee of the well and contiguous owner are unable to agree as to the terms and conditions for making the directional survey, the permittee shall pay for the survey if the bottom hole location is found to be outside of the area approved for drilling, and the contiguous owner shall pay for the survey if the bottom hole location is found to be inside of the area approved for drilling.

7. Directional surveys shall be run from total depth to the base of the surface casing or coal protection string, unless otherwise approved by the board or the director. In the event that the proposed or final location of the producing interval or intervals of any well is not in accordance with this section or a board order, the unit operator shall apply to the board for an exception to spacing. However, directional surveys to total depth shall not be required in cases where the interval below the latest survey is less than 500 feet, and in such an instance, a projection of the latest survey shall be deemed to satisfy board requirements.

8. The results of each inclination or directional survey made in accordance with this section shall be filed by the permittee with the first drilling or completion report required by the division.

B. Flow potential and gas/oil ratio tests: conventional gas or oil wells.

1. If a gas or oil well appears capable of producing gas or oil, the permittee shall conduct a potential flow test and a gas/oil ratio test within 14 days after the well is completed and capable of producing gas or oil. The permittee shall file the test results, electronically or in writing, with the division. The division director shall hold the test results confidential in accordance with § 45.1-361.6 of the Code of Virginia.

2. If a permittee deepens or stimulates a well after the initial potential flow test and gas/oil ratio test have been conducted, when determined to be necessary by the permittee or when requested by the board, the permittee shall conduct another potential flow test and gas/oil ratio test and, within 30 days after completing the test, file the results, in writing, with the division.

3. A back-flow method of determining open flow shall be used, such as recommended by the Interstate Oil and Gas Compact Commission, "Manual of Back-Pressure Testing of Gas Wells," 2000. However, when a back-flow method is believed not to be feasible, the permittee shall obtain prior approval from the division, and test the well in accordance with, an alternate method approved by the director that does not entail excessive physical waste of gas.

C. Testing of coalbed methane gas wells. If a permittee cannot test the potential flow of a coalbed methane gas well by a back-flow method or complete the test within the time period required in subdivision B 1 of this section, the permittee may request approval from the director to perform a coalbed methane gas production test. Such a test shall only be made when the water production and the gas flow rates are stabilized for a period of not less than 14 days prior to the test. The test shall be conducted for a minimum of 24 hours in the manner approved by the director. The permittee shall file the test results, electronically or in writing, with the division. The division director shall hold the test results confidential in accordance with § 45.1-361.6 of the Code of Virginia.

D. The board may, by order and after notice and hearing, require a permittee to complete other tests on any well.

Statutory Authority

§ 45.1-361.15 of the Code of Virginia.

Historical Notes

Derived from VR480-05-22.2 § 20, eff. October 23, 1991; amended, Virginia Register Volume 13, Issue 22, eff. August 20, 1997; Volume 29, Issue 3, eff. November 8, 2012.

4VAC25-160-210 to 4VAC25-160-230. [Repealed]

Historical Notes

Derived from VR480-05-22.2 §§ 21 to 23, eff. October 23, 1991; repealed, Virginia Register Volume 13, Issue 22, eff. August 20, 1997.

CHAPTER 170

GEOTHERMAL ENERGY REGULATIONS

4VAC25-170-10. Definitions.

The following words and terms when used in this chapter shall have the following meanings unless the context clearly indicates otherwise:

"Bottom hole temperature" means the highest temperature measured in the well or bore hole. It is normally attained directly adjacent to the producing zone, and commonly at or near the bottom of the borehole.

"Casing" means all pipe set in wells.

"Conservation" means the preservation of geothermal resources from loss, waste, or harm.

"Correlative rights" means the mutual right of each overlying owner in a geothermal area to produce without waste a just and equitable share of the geothermal resources. Just and equitable shares shall be apportioned according to a ratio of the overlying acreage in a tract to the total acreage included in the geothermal area.

"Department" means the Virginia Department of Mines, Minerals and Energy.

"Designated agent" means that person appointed by the owner or operator of any geothermal resource well to represent him.

"Director" means the Director of the Department of Mines, Minerals and Energy or his authorized agent.

"Division director" means the Director of the Division of Gas and Oil, also known as the Gas and Oil Inspector as defined in the Virginia Gas and Oil Act of 1990, Chapter 22.1 (§ 45.1-361.1 et seq.) of Title 45.1 of the Code of Virginia or his authorized agent.

"Drilling log" means the written record progressively describing all strata, water, minerals, geothermal resources, pressures, rate of fill-up, fresh and salt water-bearing horizons and depths, caving strata, casing records and such other information as is usually recorded in the normal procedure of drilling. The term shall also include the downhole geophysical survey records or logs if any are made.

"Exploratory well" means an existing well or a well drilled solely for temperature observation purposes preliminary to filing an application for a production or injection well permit.

"Geothermal area" means the general land area that is underlaid or reasonably appears to be

underlaid by geothermal resources in a single reservoir, pool, or other source or interrelated sources, as such area or areas may be from time to time designated by the department.

"Geothermal energy" means the usable energy produced or that can be produced from geothermal resources.

"Geothermal reservoir" means the rock, strata, or fractures within the earth from which natural or injected geothermal fluids are obtained.

"Geothermal resource" means the natural heat of the earth at temperatures 70°F or above with volumetric rates of 100 gallons per minute or greater and the energy, in whatever form, present in, associated with, or created by, or that may be extracted from, that natural heat. This definition does not include ground heat or groundwater resources at lower temperatures and rates that may be used in association with heat pump installations.

"Geothermal waste" means any loss or escape of geothermal energy, including, but not limited to:

1. Underground loss resulting from the inefficient, excessive, or improper use or dissipation of geothermal energy; or the locating, spacing, construction, equipping, operating, or producing of any well in a manner that results, or tends to result, in reducing the quantity of geothermal energy to be recovered from any geothermal area in Virginia; provided, however, that unavoidable dissipation of geothermal energy resulting from oil and gas exploration and production shall not be construed to be geothermal waste.

2. The inefficient above-ground transportation and storage of geothermal energy; and the locating, spacing, equipping, operating, or producing of any well or injection well in a manner causing or tending to cause, unnecessary or excessive surface loss or destruction of geothermal energy;

3. The escape into the open air of steam or hot water in excess of what is reasonably necessary in the efficient development or production of a well.

"Geothermal well" means any well drilled for the discovery or production of geothermal resources, any well reasonably presumed to contain geothermal resources, or any special well, converted producing well, or reactivated or converted abandoned well employed for reinjecting geothermal resources.

"Injection well" means a well drilled or converted for the specific use of injecting waste geothermal fluids back into a geothermal production zone for disposal, reservoir pressure maintenance, or augmentation of reservoir fluids.

"Monitoring well" means a well used to measure the effects of geothermal production on the quantity and quality of a potable groundwater aquifer.

"Operator" means any person drilling, maintaining, operating, producing, or in control of any well, and shall include owner when any well is operated or has been operated or is about to be operated by or under the direction of the owner.

"Owner" means the overlying property owner or lessee who has the right to drill into, produce, and appropriate from any geothermal area.

"Permit" means a document issued by the department pursuant to this chapter for the construction and operation of any geothermal exploration, production, or injection well.

"Person" means any individual natural person, general or limited partnership, joint venture, association, cooperative organization, corporation whether domestic or foreign, agency or subdivision of this or any other state or the federal government, any municipal or quasi-municipal entity whether or not it is incorporated, receiver, trustee, guardian, executor, administrator, fiduciary, or representative of any kind.

"Production casing" means the main casing string which protects the sidewalls of the well against collapse and conducts geothermal fluid to the surface.

"Production record" means written accounts of a geothermal well's volumetric rate, pressure and temperature, and geothermal fluid quality.

"Sequential utilization" means application of the geothermal resource to a use with the highest heat need and the subsequent channeling of the resource to other uses with lower temperature requirements before injection or disposal of the geothermal fluid.

"Surface casing" (water protection string) means pipe designed to protect the freshwater sands.

"Unitized drilling operation" means the management of separately owned tracts overlying a geothermal area as a single drilling unit.

Statutory Authority

§ 45.1-179.7 of the Code of Virginia.

Historical Notes

Derived from VR480-04-13 § 1, eff. May 1, 1984; amended, Virginia Register Volume 29, Issue 2, eff. October 24, 2012.

4VAC25-170-20. Resource conservation.

A. In order to foster geothermal utilization, prevent waste, protect correlative rights, safeguard the natural environment, and promote geothermal resource conservation and management, the department may designate geothermal areas, require well spacing and unitization, and allow sequential utilization on a case-by-case basis.

B. Wells shall be classified as to the geothermal area from which they produce, and geothermal areas shall be determined, designated, and named by the department in accordance with the definition provided in 4VAC25-170-10. In designating geothermal areas, factors to be considered shall include but not be limited to common usage and geographic names; the surface topography and property lines of the land underlain by geothermal energy; the plan of well spacing being employed or proposed for the area; the depth at which resources have been found; and the nature and character of the producing formation or formations. In the event any person is dissatisfied with any such classification or determination, an application may be made to the department for reclassification or redetermination.

C. Information provided the division director in the notice of intent to proceed shall be used by the department to determine spacing between production wells and between production and injection wells. The department may also conduct independent investigations as deemed necessary to determine appropriate well spacing and utilization.

When two or more separately owned tracts of land lie within a geothermal area, the department may require unitized operations under supervision of the division director. Unitized drilling operations shall be operated according to the principle of correlative rights.

D. Persons desirous of engaging in sequential utilization shall file a formal request with the department that shall contain the following items:

1. A statement of the uses to be made of the geothermal resource.

2. Evidence that sequential utilization will not cause heat drawdown in the geothermal aquifer, cause land subsidence, hinder observation of the geothermal resource, or contaminate potable water supplies.

3. Requests for sequential utilization shall be reviewed and acted upon by the department within 45 days of receipt.

Statutory Authority

§ 45.1-179.7 of the Code of Virginia.

Historical Notes

Derived from VR480-04-13 § 2, eff. May 1, 1984; amended, Virginia Register Volume 29, Issue 2, eff. October 24, 2012.

4VAC25-170-30. Bonds, permits and fees.

A. 1. Before any person shall engage in drilling for geothermal resources or construction of a geothermal well in Virginia, such person shall file with the division director a completion bond with a surety company licensed to do business in the Commonwealth of Virginia in the amount of $10,000 for each exploratory and injection well, and $25,000 for each production well. Blanket bonds of $100,000 may be granted at the discretion of the division director.

2. The return of such bonds shall be conditioned on the following requirements:

a. Compliance with all statutes, rules, and regulations relating to geothermal regulations and the permit.

b. Plugging and abandoning the well as approved by the division director in accordance with 4VAC25-170-80.

3. A land stabilization bond of $1,000 per acre of land disturbed shall be required. Such bond will be released once drilling is completed and the land is reclaimed in accordance with 4VAC25-170-40.

4. Liability under any bond may not be terminated without written approval of the division director.

B. Each exploration, production, and injection well permit application shall be accompanied by payment of a $75 application fee.

1. Applications will not be reviewed until the operator or designated agent submits proof of compliance with all pertinent local ordinances.

Before commencement of exploratory drilling operations on any tract of land, the operator or designated agent shall file an exploration permit application with the department. An accurate map of the proposed wells on an appropriate scale showing adjoining property lines and the proposed locations using the Virginia Coordinate System of 1983 (Chapter 17 (§ 55-287 et seq.) of Title 55 of the Code of Virginia), and the depths and surface elevations shall be filed with the application. The application also shall include an inventory of local water resources in the area of proposed development.

2. Before commencement of production or injection well drilling, an application to produce and inject geothermal fluids shall be filed in the form of a notice of intent to proceed in accordance with

the provisions of 4VAC25-170-40.

3. New permit applications must be submitted if, either prior to or during drilling, the operator desires to change the location of a proposed well. If the new location is within the boundaries established by the permit or within an unitized drilling operation, the application may be made orally and the division director may orally authorize the commencement or continuance of drilling operations. Within 10 days after obtaining oral authorization, the operator shall file a new application to drill at the new location. A permit may be issued and the old permit cancelled without payment of additional fee. If the new location is located outside the unitized drilling unit covered by the first permit, no drilling shall be commenced or continued until the new permit is issued.

4. All applications, requests, maps, reports, records, and other data (including report forms) required by or submitted to the department shall be signed by the owner, operator, or designated agent submitting such materials.

5. The department will act on all permit applications within 30 days of receipt of an application or as soon thereafter as practical.

Statutory Authority

§ 45.1-179.7 of the Code of Virginia.

Historical Notes

Derived from VR480-04-13 § 3, eff. May 1, 1984; amended, Virginia Register Volume 29, Issue 2, eff. October 24, 2012.

4VAC25-170-40. Notification of intent to proceed.

The notification of intent to proceed with geothermal production as required by 4VAC25-170-30 must be accompanied by (i) an operations plan, (ii) a geothermal fluid analysis, and (iii) a proposal for injection of spent fluids.

1. The operations plan shall become part of the terms and conditions of any permit that is issued, and the provisions of this plan shall be carried out where applicable in the drilling, production, and abandonment phase of the operation. The department may require any changes in the operations plan necessary to promote geothermal and water resource conservation and management, prevent waste, protect potable groundwater drinking supplies, or protect the environment, including a requirement for injection or unitization. The operations plan shall include the following information:

a. An accurate plat or map, on a scale not smaller than 400 feet to the inch, showing the proposed location using the Virginia Coordinate System of 1983 (Chapter 17 (§ 55-287 et seq.) of Title 55 of the Code of Virginia), and surface elevation of the production and injection wells as determined by survey, the courses and distances of such locations from two permanent points or landmarks on said tract, the well numbers, the name of the owner, the boundaries and acreage of the tract on which the wells are to be drilled, the location of water wells, surface bodies of water, actual or proposed access roads, other production and injection wells on adjoining tracts, the names of the owners of all adjoining tracts and of any other tract within 500 feet of the proposed location, and any building, highway, railroad, stream, oil or gas well, mine openings or workings, or quarry within 500 feet of the proposed location. The location must be surveyed and the plat certified by a registered surveyor and bear his certificate number.

b. A summary geologic report of the area, including depth to proposed reservoir; type of reservoir; anticipated thickness of reservoir; anticipated temperature of the geothermal resource; anticipated porosity, permeability and pressure; geologic structures; and description of overlying formations and aquifers.

c. The method of meeting the guidelines of the Erosion and Sediment Control Regulations as

adopted by the Virginia Soil and Water Conservation Board pursuant to §§ 10.1-561 to 10.1-564 of the Code of Virginia.

d. The method of disposing of all drilling muds and fluids, and all cement and other drilling materials from the well site; the proposed method of preventing such muds, fluids, drillings, or materials from seeping into springs, water wells, and surface waters during drilling operations.

e. The method of construction and maintenance of access roads, materials to be used, method to maintain the natural drainage area, and method of directing surface water runoff from disturbed areas around undisturbed areas.

f. The method of removing any rubbish or debris during the drilling, production, and abandonment phases of the project. All waste shall be handled in a manner that prevents fire hazards or the pollution of surface streams and groundwater.

g. The primary and alternative method of spent geothermal fluid disposal. All disposal methods shall be in accordance with state and federal laws for the protection of land and water resources.

h. The methods of monitoring fluid quality, fluid temperature, and volumetric rate of production and injection wells.

i. The method of monitoring potable drinking water aquifers close to production and injection zones.

j. The method of monitoring for land subsidence.

k. The method of plugging and abandoning wells and a plan for reclaiming production and injection well sites.

l. The method of cleaning scale and corrosion in geothermal casing.

m. A description of measures that will be used to minimize any adverse environmental impact of the proposed activities on the area's natural resources, aquatic life, or wildlife.

2. Geothermal fluid analysis.

a. A geothermal fluid analysis shall be submitted with the operations plan, and annually thereafter.

b. Acceptable chemical parameters and sampling methods are set forth in 4VAC25-170-70 B.

3. Proposal for injection of geothermal fluids.

a. Geothermal fluid shall be injected into the same geothermal area from which it was withdrawn in the Atlantic Coastal Plain. Plans for injection wells in this area shall include information on:

(1) Existing reservoir conditions.

(2) Method of injection.

(3) Source of injection fluid.

(4) Estimate of expected daily volume in gallons per minute per day.

(5) Geologic zones or formations affected.

(6) Chemical analyses of fluid to be injected.

(7) Treatment of spent geothermal fluids prior to injection.

b. Exemptions to the injection rule for geothermal fluid shall be approved by the department. Such requests shall be accompanied by a detailed statement of the proposed alternative method of geothermal fluid disposal; the effects of not injecting on such reservoir characteristics as pressure, temperature, and subsidence; and a copy of the operator's or designated agent's no-discharge permit.

Statutory Authority

§ 45.1-179.7 of the Code of Virginia.

Historical Notes

Derived from VR480-04-13 § 4, eff. May 1, 1984; amended, Virginia Register Volume 29, Issue 2, eff. October 24, 2012.

4VAC25-170-50. Well construction and maintenance.

A. Every person drilling for geothermal resources in Virginia, or operating, owning, controlling or in possession of any well as defined herein, shall paint or stencil and post and keep posted in a conspicuous place on or near the well a sign showing the name of the person, firm, company, corporation, or association drilling, owning, or controlling the well, the company or operator's well number, and the well identification number thereof. Well identification numbers will be assigned approved permits according to the USGS groundwater site inventory system. The lettering on such sign shall be kept in a legible condition at all times.

B. The division director shall receive notice prior to the commencement of well work concerning the identification number of the well and the date and time that well work is scheduled to begin. Telephone notice will fulfill this requirement.

C. 1. Drilling-fluid materials sufficient to ensure well control shall be maintained in the field area and be readily accessible for use during drilling operations.

2. All drilling muds shall be used in a fashion designed to protect freshwater-bearing sands, horizons, and aquifers from contamination during well construction.

3. Drilling muds shall be removed from the drilling site after the well is completed and disposed of in the method approved in the operations plan.

4. Operations shall be conducted with due care to minimizing the loss of reservoir permeability.

D. All wells must be drilled with due diligence to maintain a reasonably vertical well bore. Deviation tests must be recorded in the drilling log for every 1000 feet drilled.

E. 1. A well may deviate intentionally from the vertical with written permission by the division director. Such permission shall not be granted without notice to adjoining landowners, except for side-tracking mechanical difficulties.

2. When a well has been intentionally deviated from the vertical, a directional survey of the well bore must be filed with the department within 30 days after completion of the well.

3. The department shall have the right to make, or to require the operator to make, a directional survey of any well at the request of an adjoining operator or landowner prior to the completion of

the well and at the expense of said adjoining operator or landowner. In addition, if the department has reason to believe that the well has deviated beyond the boundaries of the property on which the well is located, the department also shall have the right to make, or to require the operator to make, a directional survey of the well at the expense of the operator.

F. 1. Valves approved by the division director shall be installed and maintained on every completed well so that pressure measurements may be obtained at any time.

2. Blow-out preventers during drilling shall be required when the working pressure on the wellhead connection is greater than 1000 psi.

G. 1. Geothermal production wells shall be designed to ensure the efficient production and elimination of waste or escape of the resource.

2. All freshwater-bearing sands, horizons, and aquifers shall be fully protected from contamination during the production of geothermal fluids.

3. a. Surface casing shall extend from a point 12 inches above the surface to a point at least 50 feet below the deepest known groundwater aquifer or horizon.

b. The operator, owner, or designated agent shall use new casing. Only casing that meets American Petroleum Institute specifications, as found in API 5AC, Restricted Yield Strength Casing and Tubing, March, 1982, API 5A, Casing Tubing, and Drill Pipe, March, 1982, and API 5AX, High-Strength Casing, Tubing, and Drill Pipe, March, 1982, (and all subsequent revisions thereto), shall be used in geothermal production wells.

c. Cement introduced into a well for the purpose of cementing the casing or for the purpose of creating a permanent bridge during plugging operations shall be placed in the well by means of a method approved by the division director. In addition:

(1) Each surface string shall be cemented upward from the bottom of the casing.

(2) Cement shall be allowed to stand for 24 hours or until comprehensive strength equals 500 psi before drilling.

d. The department may modify casing requirements when special conditions demand it.

4. a. The owner, operator, or designated agent shall use new casing. Only production casing that meets American Petroleum Institute specifications, as found in API 5AC, Restricted Yield Strength Casing and Tubing, March, 1982, API 5A, Casing Tubing, and Drill Pipe, March, 1982, and API

5AX, High-Strength Casing, Tubing, and Drill Pipe, March, 1982, (and all subsequent revisions thereto), shall be used in geothermal production wells.

b. Each well shall be cemented with a quantity of cement sufficient to fill the annular space from the production zone to the surface. The production casing shall be cemented to exclude, isolate, or segregate overlapping and to prevent the movement of fluids into freshwater zones.

c. Cement shall be allowed to stand for 24 hours or until compressive strength equals 500 psi before drilling.

d. Cement introduced into a well for the purpose of cementing the casing or for the purpose of creating a permanent bridge during plugging operations shall be placed in the well by means of a method approved by the division director.

e. The department may modify casing requirements when special conditions demand it.

f. The division director may require additional well tests if production or monitoring records indicate a leak in the production casing. When tests confirm the presence of a production casing leak, the division director may require whatever actions are necessary to protect other strings and freshwater horizons.

H. 1. The owner, operator, or designated agent shall use new casing. Only casing that meets American Petroleum Institute specifications, as found in API 5AC, Restricted Yield Strength Casing and Tubing, March, 1982, API 5A, Casing Tubing, and Drill Pipe, March, 1982, and API 5AX, High-Strength Casing, Tubing, and Drill Pipe, March, 1982, (and all subsequent revisions thereto), shall be used in geothermal injection wells.

2. The casing program shall be designed so that no contamination will be caused to freshwater strata. Injection shall be done through production casing adequately sealed and cemented to allow for monitoring of the annulus between the injection string and the last intermediate string or water protection string, as the case may be. Injection pressure shall be monitored and regulated to minimize the possibility of fracturing the confining strata.

3. Production casing shall be cemented through the entire freshwater zone.

4. The rate of injection of geothermal fluid shall not exceed the production rate.

5. Adequate and proper wellhead equipment shall be installed and maintained in good working order on every injection well not abandoned and plugged, so that pressure measurements may be

obtained at any time.

I. 1. The division director or a departmental representative shall have access to geothermal well sites during business hours.

2. The state geologist or his designated representative shall have access to any drilling site for the purpose of examining whole cores or cuttings as may be appropriate.

J. At least 10 days prior to any chemical cleaning of production casing, the operator shall notify the division director in writing of the type and amount of chemical to be used and obtain approval for its use.

K. The well operator, or his designated agent, shall file a completion report within 60 days after well work is completed. The completion report shall be accompanied by copies of any drilling logs required under 4VAC25-170-40.

Statutory Authority

§ 45.1-179.7 of the Code of Virginia.

Historical Notes

Derived from VR480-04-13 § 5, eff. May 1, 1984; amended, Virginia Register Volume 29, Issue 2, eff. October 24, 2012.

4VAC25-170-60. Records, logs and general requirements.

A. 1. During the drilling and production phases of every well, the owner, operator, or designated agent responsible for the conduct of drilling operations shall keep at the well an accurate record of the well's operations as outlined in subsection C of this section. These records shall be accessible to the division director at all reasonable hours.

2. The refusal of the well operator or designated agent to furnish upon request such logs or records or to give information regarding the well to the department shall constitute sufficient cause to require the cessation or shutting down of all drilling or other operations at the well site until the request is honored.

3. Drilling logs supplied to the department will be kept in confidence in accordance with § 40.1-11 of the Code of Virginia.

4. Copies of all drilling logs and productions records required by this chapter shall be sent electronically or mailed to:

Virginia Gas and Oil Division Director
Department of Mines, Minerals and Energy
Division of Gas and Oil
P.O. Box 159
Lebanon, VA 24266

5. Samples representative of all strata penetrated in each well shall be collected and furnished to the Commonwealth. Such samples shall be in the form of rock cuttings collected so as to represent the strata encountered in successive intervals no greater than 10 feet. If coring is done, however, the samples to be furnished shall consist, at a minimum, of one-quarter segments of core obtained. All samples shall be handled as follows:

a. Rock cuttings shall be dried and properly packaged in a manner that will protect the individual samples, each of which shall be identified by the well name, identification number, and interval penetrated.

b. Samples of core shall be boxed according to standard practice and identified as to well name and identification number and interval penetrated.

c. All samples shall be shipped or mailed, charges prepaid, to:

Department of Mines, Minerals and Energy
Division of Mineral Resources
Fontaine Research Park
900 Natural Resources Drive
P.O. Box 3667
Charlottesville, VA 22903

B. Each well operator, owner, or designated agent, within 30 days after the completion of any well, shall furnish to the division director a copy of the drilling log. Drilling logs shall list activities in chronological order and include the following information:

1. The well's location and identification number.

2. A record of casings set in wells.

3. Formations encountered.

4. Deviation tests for every one thousand feet drilled.

5. Cementing procedures.

6. A copy of the downhole geophysical logs.

C. The owner, operator, or designated agent of any production or injection well shall keep or cause to be kept a careful and accurate production record. The following information shall be reported to the division director on a monthly basis for the first six months and quarterly thereafter, or as required by permit, unless otherwise stated:

1. Pressure measurements as monitored by valves on production and injection wells.

2. The volumetric rate of production or injection measured in terms of the average flow of geothermal fluids in gallons per minute per day of operation.

3. Temperature measurements of the geothermal fluid being produced or injected, including the maximum temperature measured in the bore-hole and its corresponding depth, and the temperature of the fluid as measured at the discharge point at the beginning and conclusion of a timed production test.

4. Hydraulic head as measured by the piezometric method.

Statutory Authority

§ 45.1-179.7 of the Code of Virginia.

Historical Notes

Derived from VR480-04-13 § 6, eff. May 1, 1984; amended, Virginia Register Volume 29, Issue 2, eff. October 24, 2012.

4VAC25-170-70. Groundwater monitoring.

A. 1. Groundwater shall be monitored through special monitoring wells or existing water wells in the area of impact, as determined by the department.

2. Monitoring shall be performed and reported to the division director daily on both water quality and piezometric head for the first 30 days of geothermal production. Thereafter, quarterly tests for piezometric head and for water quality shall be reported to the division director.

3. The monitoring of groundwater shall meet the following conditions:

a. A minimum of one monitoring well per production or injection well is required. Monitoring wells shall monitor those significant potable aquifers through which the well passes as required by the department.

b. The monitoring wells shall be located within the first 50% of the projected cone of depression for the geothermal production well.

c. The well(s) shall be constructed to measure variations in piezometric head and water quality. Groundwater shall be chemically analyzed for the following parameters: mineral content (alkalinity, chloride, dissolved solids, fluoride, calcium, sodium, potassium, carbonate, bicarbonate, sulfate, nitrate, boron, and silica); metal content (cadmium, arsenic, mercury, copper, iron, nickel, magnesium, manganese, and zinc); and general parameters (pH, conductivity, dissolved solids, and hardness).

d. The department may require additional analyses if levels of the above parameters indicate their necessity to protect groundwater supplies.

B. 1. Chemical analyses of geothermal fluids shall be filed with the division director on an annual basis.

2. Samples for the chemical fluid analysis shall be taken from fluid as measured at the discharge point of the production well at the conclusion of a two-hour production test.

3. The production fluid shall be chemically analyzed for the following parameters: mineral content (alkalinity, chloride, dissolved solids, fluoride, calcium, sodium, potassium, carbonate, bicarbonate, sulfate, nitrate, boron, and silica); metal content (cadmium, arsenic, mercury, copper, iron, nickel,

magnesium, manganese, and zinc); gas analyses (hydrogen sulfide, ammonia, carbon dioxide, and gross alpha); and general parameters (pH, conductivity, and dissolved solids).

4. The department may require additional analyses if levels of the above parameters indicate follow-up tests are necessary.

C. 1. Subsidence shall be monitored by the annual surveys of a certified surveyor from vertical benchmarks located above the projected cone of depression, as well as points outside its boundaries. The surveys shall be filled with the division director by the operator or designated agent.

2. The department may order micro-earthquake monitoring, if surveys indicate the occurrence of subsidence.

D. 1. The operator, owner, or designated agent shall maintain records of any monitoring activity required in his permit or by this chapter. All records of monitoring samples shall include:

a. The well identification number.

b. The date the sample was collected.

c. Time of sampling.

d. Exact place of sampling.

e. Person or firm performing analysis.

f. Date analysis of the sample was performed.

g. The analytical method or methods used.

h. Flow-point at which sample was taken.

i. The results of such analysis.

2. The operator, owner, or designated agent shall retain for a period of five years any records of monitoring activities and results, including all original strip chart recordings of continuous monitoring installations. The period of retention will automatically be extended during the course of any litigation regarding the discharge of contaminants by the permittee until such time as the litigation has ceased or when requested by the division director. This requirement shall apply during the five-year period following abandonment of a well.

Statutory Authority

§ 45.1-179.7 of the Code of Virginia.

Historical Notes

Derived from VR480-04-13 § 7, eff. May 1, 1984; amended, Virginia Register Volume 29, Issue 2, eff. October 24, 2012.

4VAC25-170-80. Abandonment and plugging of wells.

A. Notification of intent to abandon any exploration, production, or injection well must be received by the division director during working hours at least one day before the beginning of plugging operations. When notification of intent to abandon an exploratory, production, or injection well is received, the division director may send a departmental representative to the location specified and at the time stated to witness the plugging of the well.

B. 1. Any drilling well completed as a dry hole from which the rig is to be removed shall be cemented unless authorization to the contrary has been given by the division] director.

2. The bottom of the hole shall be filled to, or a bridge shall be placed at the top of, each producing formation open to the well bore. Additionally, a cement plug not less than 50 feet in length shall be placed immediately above each producing formation.

3. A continuous cement plug shall be placed through all freshwater-bearing aquifers and shall extend at least 50 feet above and 50 feet below said aquifers.

4. A plug not less than 20 feet in length shall be placed at or near the surface of the ground in each hole.

5. The interval between plugs shall be filled with a nonporous medium.

6. The method of placing cement in the holes shall be by any method approved by the division director in advance of placement.

7. The exact location of each abandoned well shall be marked by a piece of pipe not less than four inches in diameter securely set in concrete and extending at least four feet above the general ground level. A permanent sign of durable construction shall be welded or otherwise permanently attached to the pipe, and shall contain the well identification information required by 4VAC25-170-50.

8. When drilling operations have been suspended for 60 days, the well shall be plugged and abandoned unless written permission for temporary abandonment has been obtained from the division director.

9. Within 20 days after the plugging of any well, the responsible operator, owner, or designated agent who plugged or caused the well to be plugged shall file a notice with the department

indicating the manner in which the well was plugged.

Statutory Authority

§ 45.1-179.7 of the Code of Virginia.

Historical Notes

Derived from VR480-04-13 § 8, eff. May 1, 1984; amended, Virginia Register Volume 29, Issue 2, eff. October 24, 2012.

4VAC25-170-90. Environmental protection; impacts; noise abatement.

A. In the absence of coverage by any other section of this chapter, the department shall require operations under this chapter to be conducted so as not to pollute land, water, or air. Federal and state air and water quality standards shall be followed unless more stringent requirements are stipulated by the department. More stringent requirements, if stipulated, shall be made during the permit process. Notices of such requirements will be sent to the applicant and a notice published permitting 30 days for written comments. The review of operations plans shall take into account any adverse effects on groundwaters, streams, plants, fish and wild-life wildlife populations, atmosphere, or any other effects which may cause or contribute to pollution. Should environmental conditions warrant, owners, operators, or their designated agents may be required to conduct special environmental studies or monitoring.

B. Noise output from geothermal sites shall be limited to 65 dB/A at the lease boundary or within one-half mile of the source, whichever is greater.

Statutory Authority

§§ 45.1-161.3, 45.1-179.6 and 45.1-179.7 of the Code of Virginia.

Historical Notes

Derived from VR480-04-13 § 9, eff. May 1, 1984.

FORMS (4VAC25-170)

Registration Form for Drillers, Owners and Operators of Geothermal Wells, DGO-G-01 (rev. 6/09).

Application for Exploration Permit, DGO-G-02 (rev. 6/09).

Appendix for Exploration Permit if the Well Work Involves Drilling, Redrilling or Deepening, DGO-G-02A (rev. 6/09).

Geothermal Resource Well Operator's Bond, DGO-G-03 (rev. 6/09).

Release of Geothermal Resource Well Operator's Surety Bond, DGO-G-03A (rev. 6/09).

Geothermal Well Plat, DGO-G-04 (rev. 6/89).

Certification of Location of New Well, DGO-G-04A (rev. 6/09).

Report on Completion of Well Work, DGO-G-05 (rev. 6/09).

Report of Completion of Work if Drilling, Redrilling or Deepening is Involved, DGO-G-05A (rev. 6/09).

Notice of Intent to Plug or Abandon, and Affidavit, DGO-G-05B (rev. 6/09).

Casing and Tubing Program, DGO-G-05C (rev. 6/09).

Driller's Log, DGO-G-05D (rev. 6/09).

Notice of Intent to Proceed, DGO-G-06 (rev. 6/09).

Geothermal Resource Production or Injection Report, DGO-G-07 (rev. 6/09).

Groundwater Monitoring Report, DGO-G-08 (rev. 6/09).

Geothermal Fluid Monitoring Report, DGO-G-09 (rev. 6/09).

Notification of Chemical Cleaning of a Geothermal Well, DGO-G-10 (rev. 6/09).

Surveyor's Report on Subsidence, DGO-G-11 (rev. 6/09).

Application for Reclassification of a Geothermal Area, DGO-G-12 (rev. 6/09).

Request for Permission to Engage in Sequential Utilization, DGO-G-13 (rev. 6/09).

Application for Exemption from Injection Requirement, DGO-G-14 (rev. 6/09).