

## **PRIVATE WELL REGULATIONS**

**12 VAC 5-630-10 et seq.**

**August 16, 2012**

### **12VAC5-630-10. Definitions.**

The following words and terms, when used in this chapter, shall have the following meanings unless the context clearly indicates otherwise.

"Abandoned well" means a private well whose pump has been disconnected for reasons other than repair or replacement, or whose use has been discontinued or pronounced abandoned by the owner. A temporarily abandoned well is a well that is intended to be returned to service as a source of water at some future time. A permanently abandoned well is a well that is not intended to be used as a source of water at any future time. Abandoned wells must meet the requirements of 12VAC5-630-450.

"Agent" means a legally authorized representative of the owner.

"Annular space" means the space between the bore hole wall and the outside of a water well casing pipe, or between a casing pipe and a liner pipe.

"Aquifer" means a geologic formation, group of formations, or part of a formation, that transmits water.

"Bedrock" means any solid rock underlying soil, sand, or clay.

"Bored well" means a well that is excavated by means of a soil auger (hand or power) as distinguished from a well which is drilled, driven, dug, or jetted.

"Closed-loop ground-source heat pump well" means a well consisting of a sealed loop of plastic pipe buried beneath the earth's surface to allow heat transfer between the fluid in the pipe and the earth.

"Collapsing material" means any soil or gravel material which collapses upon itself forming a seal with the casing and leaves no voids around the casing.

"Commercially dependent well" means a well that is the sole source of water for a commercial facility that requires the water from the well for continued operation. Examples include wells serving an ice plant, a car wash facility, irrigation for commercial nurseries, or agricultural wells that provide water for livestock or irrigation.

"Commissioner" means the State Health Commissioner or his subordinate who has been delegated powers in accordance with 12VAC5-630-90 B of this chapter.

"Confined aquifer" means an aquifer that is confined by an overlying impermeable formation.

"Consolidated rock" means a formation consisting entirely of a natural rock formation that contains no soil and does not collapse against the well casing.

"Construction of wells" means acts necessary to construct private wells, including the location of private wells, the boring, digging, drilling, or otherwise excavating of a well hole and the installation of casing with or without well screens, or well curbing.

"Deep well ejector pump system" means a well that utilizes a casing adapter and a deep well ejector. These wells must maintain a constant vacuum to operate.

"Dewatering well" means a driven well constructed for the sole purpose of lowering the water table and kept in operation for a period of 60 days or less. Dewatering wells are used to allow construction in areas where a high water table hinders or prohibits construction and are always temporary in nature.

"Disinfection" means the destruction of all pathogenic organisms.

"Division" means the Division of On-Site Sewage and Water Services.

"District health department" means a consolidation of local health departments as authorized in § 32.1-31 C of the Code of Virginia.

"Drilled shallow well suction pump system" means a drilled well two inches or less in diameter that utilizes an offset pump to draw water from the well through the casing. These wells must maintain a constant vacuum in order to operate.

"Drilled well" means a well that is excavated wholly or in part by means of a drill (either percussion or rotary) which operates by cutting or abrasion.

"Driven well" means a well that is constructed by driving a pipe, at the end of which there is a drive point and screen, without the use of any drilling, boring or jetting device.

"Dug well" means a well that is excavated by means of picks, shovels, or other hand tools, or by means of a power shovel or other dredging or trenching machinery, as distinguished from a bored, drilled, driven, or jetted well.

"Emergency well replacement" means the replacement of an existing private drinking water well, heat pump well, or commercially dependent well that has failed to deliver the water needed for its intended use. Such failure requires the drilling of a new well or extensive modifications to the existing well. The replacement of failed noncommercial irrigation wells, and other types of private wells are not considered emergencies.

"Gravel pack" means gravel placed outside a well screen in a well to assist the flow of water into the well screen and to inhibit clogging of the screen.

"Ground water" means any water, except capillary moisture, beneath the land surface in the zone of saturation or beneath the bed of any stream, lake, reservoir or other body of surface water within the boundaries of this Commonwealth, whatever may be the subsurface geologic structure in which such water stands, flows, percolates, or otherwise occurs.

"Grout" means any stable, impervious bonding material, reasonably free of shrinkage, which is capable of providing a watertight seal in the annular spaces of a water well throughout the depth required, to protect against the intrusion of objectionable matter.

"Jetted well" means a well that is excavated using water pumped under pressure through a special washing point to create a water jet which cuts, abrades, or erodes material to form the well.

"Local health department" means the department established in each city and county in accordance with § 32.1-30 of the Code of Virginia.

"Noncollapsing material" means soil or gravel material which can maintain an open bore hole long enough to grout the annular space between a well and the bore hole. For the purpose of this chapter, soil or gravel material which collapsed upon itself but created voids around the casing is considered noncollapsing material.

"Observation or monitoring well" means a well constructed to measure hydrogeologic parameters, such as the fluctuation of water levels, or for monitoring the quality of ground water, or for both purposes.

"Owner" means any person, who owns, leases, or proposes to own or lease a private well.

"Person" means any and all persons, including individuals, firms, partnerships, associations, public or private institutions, municipalities or political subdivisions, governmental agencies, or private or public corporations organized under the law of this Commonwealth or any other state or country.

"Private well" means any water well constructed for a person on land which is owned or leased by that person and is usually intended for household, ground water source heat pump, agricultural use, industrial use, or other nonpublic water well.

"Replacement well" means a well being constructed to take the place of an existing well that is being taken out of service and is being abandoned.

"Sanitary survey" means an investigation of any condition that may affect public health.

"Screen" means the intake section of a well that obtains water from an unconsolidated aquifer providing for the water to flow freely and adding structural support to the bore hole. Screens are used to increase well yield or prevent the entry of sediment, or both.

"Sewage" means water carried and nonwater carried human excrement, kitchen, laundry, shower, bath, or lavatory wastes separately or together with such underground, surface, storm and other water and liquid industrial wastes as may be present from residences, buildings, vehicles, industrial establishments or other places.

"Sewage disposal system" means a sewerage system or treatment works designed not to result in a point source discharge.

"Sewer" means any sanitary or combined sewer used to convey sewage or municipal or industrial wastes.

"Sewerage system" means pipelines or conduits, pumping stations and force mains and all other construction, devices and appliances appurtenant thereto, used for the collection and conveyance of sewage to a treatment works or point of ultimate disposal.

"Subsurface soil absorption" means a process which utilizes the soil to treat and dispose of sewage effluent.

"Treatment works" means any device or system used in the storage, treatment, disposal or reclamation of sewage or combinations of sewage and industrial wastes, including but not limited to pumping, power and other equipment and appurtenances, septic tanks, and any works, including land, that are or will be (i) an integral part of the treatment process or (ii) used for the ultimate disposal of residues or effluents resulting from such treatment.

"Variance" means a conditional waiver of a specific regulation which is granted to a specific owner relating to a specific situation or facility and may be for a specified time period.

"Water table" means the uppermost surface of ground water saturation. The level in the saturated zone at which the pressure is equal to atmospheric pressure.

"Water well" or "well" means any artificial opening or artificially altered natural opening, however made, by which ground water is sought or through which ground water flows under natural pressure or is intended to be artificially drawn; provided this definition shall not include wells drilled for the following purposes: (i) exploration or production of oil or gas, (ii) building foundation investigation and construction, (iii) elevator shafts, (iv) grounding of electrical apparatus, or (v) the modification or development of springs.

"Yield" means the quantity of water, usually measured in volume of water per unit time, which may flow or which may be pumped, from a well or well field.

Article 2  
General Provisions

**12VAC5-630-20. Authority for regulations.**

Title 32.1 of the Code of Virginia, and specifically §§ 32.1-12 and 32.1-176.4, provide that the State Board of Health has the duty to protect the public health and to ensure that ground water resources are not adversely affected by the construction and location of private wells. In order to discharge this duty, the board is empowered to supervise and regulate the construction and location of private wells within the Commonwealth.

**12VAC5-630-30. Purpose of regulations.**

These regulations have been promulgated by the State Board of Health to:

1. Ensure that all private wells are located, constructed and maintained in a manner which does not adversely affect ground water resources, or the public welfare, safety and health;
2. Guide the State Health Commissioner in his determination of whether a permit for construction of a private well should be issued or denied;
3. Guide the owner or his agent in the requirements necessary to secure a permit for construction of a private well; and
4. Guide the owner or his agent in the requirements necessary to secure an inspection statement following construction.

**12VAC5-630-40. Relationship to Virginia Sewage Handling and Disposal Regulations.**

This chapter supersedes 12VAC5-610-1150 of the Virginia Sewage Handling and Disposal Regulations, and 12VAC5-610-1140 B and C of the Virginia Sewage Handling and Disposal Regulations which address private wells, and were adopted by the State Board of Health pursuant to Title 32.1 of the Code of Virginia.

**12VAC5-630-50. Relationship to the State Water Control Board.**

This chapter is independent of all regulations promulgated by the State Water Control Board. Ground water users located in a ground water management area may be required to obtain a permit from the State Water Control Board in addition to obtaining a permit from the Department of Health.

**12VAC5-630-60. Relationship to the Department of Environmental Quality, Waste Management Division.**

This chapter establishes minimum standards for the protection of public health and ground water resources. Observation wells, monitoring wells, and remediation wells constructed under

the supervision of the Virginia Department of Environmental Quality, Waste Management Division, are governed by 12VAC5-630-420.

**12VAC5-630-70. Relationship to the Uniform Statewide Building Code.**

This chapter is independent of and in addition to the requirements of the Uniform Statewide Building Code. All persons required to obtain a well permit by this chapter shall furnish a copy of the permit to the local building official, upon request, when making application for a building permit. Prior to obtaining an occupancy permit, an applicant shall furnish the local building official with a copy of the inspection statement demonstrating the water supply has been inspected, sampled (when applicable), and approved by the district or local health department.

**12VAC5-630-80. Relationship to the Department of Professional and Occupational Regulation.**

In accordance with § 54.1-1100 of the Code of Virginia, any contractor constructing a water well to reach ground water shall possess, as a minimum, a valid Class B contractors license.

**12VAC5-630-90. Administration of regulations.**

This chapter is administered by the following:

A. The State Board of Health, hereinafter referred to as the board, has the responsibility to promulgate, amend, and repeal regulations necessary to ensure the proper construction and location of private wells.

B. The State Health Commissioner, hereinafter referred to as the commissioner, is the chief executive officer of the State Department of Health. The commissioner has the authority to act, within the scope of regulations promulgated by the board, and for the board when it is not in session. The commissioner may delegate his powers under this chapter in writing to any subordinate, with the exception of (i) his power to issue variances under § 32.1-12 of the Code of Virginia and 12VAC5-630-170, (ii) his power to issue orders under § 32.1-26 of the Code of Virginia and 12VAC5-630-140 and 12VAC5-630-150 B and (iii) the power to revoke permits or inspection statements under 12VAC5-630-290, which may only be delegated pursuant to § 32.1-22 of the Code of Virginia.

The commissioner has final authority to adjudicate contested case decisions of subordinates delegated powers under this section prior to appeal of such case decisions to the circuit court.

C. The State Department of Health hereinafter referred to as department is designated as the primary agent of the commissioner for the purpose of administering this chapter.

D. The district or local health departments are responsible for implementing and enforcing the regulatory activities required by this chapter.

**12VAC5-630-100. Right of entry and inspections.**

In accordance with the provisions of §§ 32.1-25 and 32.1-12 and 32.1-176.6 of the Code of Virginia, the commissioner or his designee shall have the right to enter any property to ensure compliance with this chapter.

Part II  
Procedural Regulations  
Article 1  
Procedures

**12VAC5-630-110. Compliance with the Administrative Process Act.**

The provisions of the Virginia Administrative Process Act (§ 9-6.14:1 et seq. of the Code of Virginia) shall govern the promulgation and administration of this chapter and shall be applicable to the appeal of any case decision based upon this chapter.

**12VAC5-630-120. Powers and procedures of regulations not exclusive.**

The commissioner may enforce this chapter through any means lawfully available.

**12VAC5-630-130. [Reserved]**

**12VAC5-630-140. Emergency order.**

If an emergency exists the commissioner may issue an emergency order as is necessary for preservation of public health, safety, and welfare or to protect ground water resources. The emergency order shall state the reasons and precise factual basis upon which the emergency order is issued. The emergency order shall state the time period for which it is effective. Emergency orders will be publicized in a manner deemed appropriate by the commissioner. The provisions of 12VAC5-630-150 C and D shall not apply to emergency orders issued pursuant to this section.

**12VAC5-630-150. Enforcement of regulations.**

A. Notice. Subject to the exceptions below, whenever the commissioner or the district or local health department has reason to believe a violation of any of this chapter has occurred or is occurring, the alleged violator shall be notified. Such notice shall be made in writing, shall be delivered personally or sent by certified mail, shall cite the regulation or regulations that are allegedly being violated, shall state the facts which form the basis for believing the violation has occurred or is occurring, shall include a request for a specific action by the recipient by a specified time and shall state the penalties associated with such violation. When the commissioner deems it necessary, he may initiate criminal prosecution or seek civil relief through mandamus or injunction prior to giving notice.

B. Orders. Pursuant to the authority granted in § 32.1-26 of the Code of Virginia, the commissioner may issue orders to require any owner, or other person, to comply with the provisions of this chapter. The order shall be signed by the commissioner and may require:

1. The immediate cessation and correction of the violation;
2. Appropriate remedial action to ensure that the violation does not recur;
3. The submission of a plan to prevent future violations to the commissioner for review and approval;
4. The submission of an application for a variance; or
5. Any other corrective action deemed necessary for proper compliance with the chapter.

C. Hearing before the issuance of an order. Before the issuance of an order described in 12VAC5-630-150, a hearing must be held, with at least 30 days notice by certified mail to the affected owner or other person of the time, place and purpose thereof, for the purpose of adjudicating the alleged violation or violations of this chapter. The procedures at the hearing shall be in accordance with 12VAC5-630-180 A or B of this chapter and with §§ 9-6.14:11 through 9-6.14:14 of the Code of Virginia.

D. Order; when effective. All orders issued pursuant to 12VAC5-630-150 shall become effective not less than 15 days after mailing a copy thereof by certified mail to the last known address of the owner or person violating this chapter. Violation of an order is a Class 1 misdemeanor. See § 32.1-27 of the Code of Virginia.

E. Compliance with effective orders. The commissioner may enforce all orders. Should any owner or other person fail to comply with any order, the commissioner may:

1. Apply to an appropriate court for an injunction or other legal process to prevent or stop any practice in violation of the order;
2. Commence administrative proceedings to suspend or revoke the construction permit;
3. Request the Attorney General to bring an action for civil penalty, injunction, or other appropriate remedy; or
4. Request the Commonwealth's Attorney to bring a criminal action.

F. Not exclusive means of enforcement. Nothing contained in 12VAC5-630-140 or 12VAC5-630-150 shall be interpreted to require the commissioner to issue an order prior to commencing administrative proceedings or seeking enforcement of any regulations or statute through an injunction, mandamus or criminal prosecution.

**12VAC5-630-160. Suspension of regulations during disasters.**

If in the case of a man-made or natural disaster, the commissioner finds that certain regulations cannot be complied with and that the public health is better served by not fully complying with this chapter, he may authorize the suspension of the application of the chapter

for specifically affected localities and institute a provisional regulatory plan until the disaster is abated.

**12VAC5-630-170. Variances.**

Only the commissioner or the deputy commissioners may grant a variance to this chapter. (See §§ 32.1-12 and 32.1-22 of the Code of Virginia and 12VAC5-630-90 B.) The commissioner or the deputy commissioners shall follow the appropriate procedures set forth in this subsection in granting a variance.

A. Requirements for a variance. The commissioner may grant a variance if a thorough investigation reveals that the hardship imposed by this chapter outweighs the benefits that may be received by the public. Further, the granting of such a variance shall not subject the public to unreasonable health risks or jeopardize ground water resources.

Exception: The commissioner shall not grant a variance for an improperly located Class IV well that was located pursuant to an express Class IV permit, as described under 12VAC5-630-260 and 12VAC5-630-270, if the improper location of the well is a result of the failure by the owner, his agent, or the well driller to provide complete or accurate information on the site plan submitted with the application or to install the well in accordance with the permit.

B. Application for a variance. Any owner who seeks a variance shall apply in writing within the time period specified in 12VAC5-630-210 B. The application shall be signed by the owner, addressed and sent to the commissioner at the State Department of Health in Richmond. The application shall include:

1. A citation to the section from which a variance is requested;
2. The nature and duration of the variance requested;
3. Any relevant analytical results including results of relevant tests conducted pursuant to the requirements of this chapter;
4. Statements or evidence why the public health and welfare as well as the ground water resources would not be degraded if the variance were granted;
5. Suggested conditions that might be imposed on the granting of a variance that would limit the detrimental impact on the public health and welfare or ground water resources;
6. Other information, if any, believed pertinent by the applicant; and
7. Such other information as the district or local health department or commissioner may require.

C. Evaluation of a variance application.

1. The commissioner shall act on any variance request submitted pursuant to 12VAC5-630-170 B within 60 calendar days of receipt of the request.
2. In the evaluation of a variance application, the commissioner shall consider the following factors:
  - a. The effect that such a variance would have on the construction, location, or operation of the private well;
  - b. The cost and other economic considerations imposed by this requirement;
  - c. The effect that such a variance would have on protection of the public health;
  - d. The effect that such a variance would have on protection of ground water resources; and
  - e. Such other factors as the commissioner may deem appropriate.

D. Disposition of a variance request.

1. The commissioner may deny any application for a variance by sending a denial notice to the applicant by certified mail. The notice shall be in writing and shall state the reasons for the denial.
2. If the commissioner proposes to grant a variance request submitted pursuant to 12VAC5-630-170 B, the applicant shall be notified in writing of this decision. Such notice shall identify the variance, private well covered, and shall specify the period of time for which the variance will be effective. The effective date of a variance shall be as stated in the variance.
3. No owner may challenge the terms or conditions set forth in the variance after 30 calendar days have elapsed from the effective date of the variance.

E. Posting of variances. All variances granted to any private wells are transferable from owner to owner unless otherwise stated. Each variance shall be attached to the permit to which it is granted. Each variance is revoked when the permit to which it is attached is revoked.

F. Hearings on disposition of variances. Subject to the time limitations specified in 12VAC5-630-210, hearings on denials of an application for a variance or on challenges to the terms and conditions of a granted variance may be held pursuant to 12VAC5-630-180 A or B, except that informal hearings under 12VAC5-630-180 A shall be held by the commissioner or his designee.

### **12VAC5-630-180. Hearing types.**

Hearings before the commissioner or the commissioner's designees shall include any of the following forms depending on the nature of the controversy and the interests of the parties involved.

A. Informal hearings. An informal hearing is a meeting with a district or local health department with the district or local health director presiding and held in conformance with § 9-6.14:11 of the Code of Virginia. The district or local health department shall consider all evidence presented at the meeting which is relevant to the issue in controversy. Presentation of evidence, however, is entirely voluntary. The district or local health department shall have no subpoena power. No verbatim record need be taken at the informal hearing. The local or district health director shall review the facts presented and based on those facts render a decision. A written copy of the decision and the basis for the decision shall be sent to the appellant within 15 work days of the hearing, unless the parties mutually agree to a later date in order to allow the department to evaluate additional evidence. If the decision is adverse to the interests of the appellant, an aggrieved appellant may request an adjudicatory hearing pursuant to 12VAC5-630-180 B below.

B. Adjudicatory hearing. The adjudicatory hearing is a formal, public adjudicatory proceeding before the commissioner, or a designated hearing officer, and held in conformance with § 9-6.14:12 of the Code of Virginia. An adjudicatory hearing includes the following features:

1. Notice. Notice which states the time and place and the issues involved in the prospective hearing shall be sent to the owner or other person who is the subject of the hearing. Notice shall be sent by certified mail at least 15 calendar days before the hearing is to take place.
2. Record. A record of the hearing shall be made by a court reporter. A copy of the transcript of the hearing, if transcribed, will be provided within a reasonable time to any person upon written request and payment of the cost.
3. Evidence. All interested parties may attend the hearing and submit oral and documentary evidence and rebuttal proofs, expert or otherwise, that are material and relevant to the issues in controversy. The admissibility of evidence shall be determined in accordance with § 9-6.14:12 of the Code of Virginia.
4. Counsel. All parties may be accompanied by and represented by counsel and are entitled to conduct such cross examination as may elicit a full and fair disclosure of the facts.

5. Subpoena. Pursuant to § 9-6.14:13 of the Code of Virginia, the commissioner or hearing officer may issue subpoenas on behalf of himself or any person or owner for the attendance of witnesses and the production of books, papers or maps. Failure to appear or to testify or to produce documents without adequate excuse may be reported by the commissioner to the appropriate circuit court for enforcement.

6. Judgment and final order. The commissioner may designate a hearing officer or subordinate to conduct the hearing as provided in § 9-6.14:12 of the Code of Virginia, and to make written recommended findings of fact and conclusions of law to be submitted for review and final decision by the commissioner. The final decision of the commissioner shall be reduced to writing and will contain the explicit findings of fact upon which his decision is based. Certified copies of the decision shall be delivered to the owner affected by it. Notice of a decision will be served upon the parties and become a part of the record. Service may be by personal service or certified mail return receipt requested.

**12VAC5-630-190. Request for hearing.**

A request for an informal hearing shall be made by sending the request in writing to the district or local health department. A request for an adjudicatory hearing shall be made in writing and directed to the commissioner at the State Department of Health in Richmond. Requests for hearings shall cite the reason(s) for the hearing request and shall cite the section(s) of this chapter involved.

**12VAC5-630-200. Hearing as a matter of right.**

Any owner or other person whose rights, duties, or privileges have been, or may be affected by any decision of the board or its subordinates in the administration of this chapter shall have a right to both informal and adjudicatory hearings. The commissioner may require participation in an informal hearing before granting the request for a full adjudicatory hearing. Exception: No person other than an owner shall have the right to an adjudicatory hearing to challenge the issuance of either a construction permit or inspection statement unless the person can demonstrate at an informal hearing that the minimum standards contained in this chapter have not been applied and that he will be injured in some manner by the issuance of the permit or that ground water resources will be damaged by the issuance of the permit.

**12VAC5-630-210. Appeals.**

Any appeal from a denial of a construction permit for a private well must be made in writing and received by the department within 60 days of the date of the denial.

A. Any request for hearing on the denial of an application for a variance pursuant to 12VAC5-630-170 D 1 must be made in writing and received within 60 days of receipt of the denial notice.

B. Any request for a variance must be made in writing and received by the department prior to the denial of the private well permit, or within 60 days after such denial.

C. In the event a person applies for a variance within the 60-day period provided by subsection B above, the date for appealing the denial of the permit, pursuant to subsection A above, shall commence from the date on which the department acts on the request for a variance.

D. Pursuant to the Administrative Process Act (§ 9-6.14:1 et seq. of the Code of Virginia) an aggrieved owner may appeal a final decision of the commissioner to an appropriate circuit court.

**12VAC5-630-220. Permits and inspection statement; general.**

All private wells shall be constructed and located in compliance with the requirements as set forth in this chapter.

A. Except as provided in 12VAC5-630-220 B below, after the effective date of this chapter, no person shall construct, alter, rehabilitate, abandon or extend a private well, or allow the construction, alteration, rehabilitation, abandonment or extension of a private well, without a written construction permit from the commissioner. Conditions may be imposed on the issuance of any permit and no private well shall be constructed or modified in violation of those conditions. The replacement of a well pump, or the replacement of a well seal or cap with an equivalent well seal or cap, shall not be considered a well modification.

B. No permit shall be required for the construction, operation, or abandonment of dewatering wells. Furthermore, dewatering wells are exempted from the construction requirements found in 12VAC5-630-410. All dewatering wells shall be abandoned within 60 days of construction. Abandonment in this case means the removal of the well point, well casing, screening, and other appurtenances associated with the construction and operation of the well.

C. Except as provided in 12VAC5-630-320, no person shall place a private well in operation, or cause or allow a private well to be placed in operation, without obtaining a written inspection statement pursuant to 12VAC5-630-310 and 12VAC5-630-330.

D. Except as provided in 12VAC5-630-270, 12VAC5-630-290 and 12VAC5-630-300, construction permits for a private well shall be deemed valid for a period of 54 months from the date of issuance.

**12VAC5-630-230. Procedures for obtaining a construction permit for a private well.**

Construction permits are issued by the authority of the commissioner. All requests for a private well construction permit shall be by written application, signed by the owner or his agent, and shall be directed to the district or local health department. All applications shall be made on an application form provided by the district or local health department and approved by the commissioner.

An application shall be deemed completed upon receipt by the district or local health department of a signed and dated application, together with the appropriate fee, containing the following information:

1. The property owner's name, address, and telephone number;
2. The applicant's name, address, and phone number (if different from subdivision 1 above);
3. A statement signed by the property owner, or his agent, granting the Health Department access to the site for the purposes of evaluating the suitability of the site for a well and allowing the department access to inspect the well after it is installed;
4. A site plan showing the proposed well site, property boundaries, accurate locations of actual or proposed sewage disposal systems, recorded easements, and other sources of contamination within 100 feet of the proposed well site, and at the option of the applicant a proposed well design; and
5. When deemed necessary because of geological or other natural conditions, plans and specifications detailing how the well will be constructed.

**12VAC5-630-240. Issuance of the construction permit.**

A construction permit shall be issued to the owner by the commissioner no later than 60 days after receipt of a complete and approvable application submitted under 12VAC5-630-230. If applicable, the applicant shall comply with 12VAC5-630-340 prior to issuance of the permit.

**12VAC5-630-250. Emergency procedures.**

Applications for replacement wells that meet the definition of an emergency well replacement (12VAC5-630-10) shall have priority over normal applications for private well permits. Emergency procedures are as follows:

A. Drinking water wells. In the event a private drinking water well has failed and must be replaced, the local health department will conduct a sanitary survey of the property and surrounding area to determine the most suitable location. If a site is found that meets the minimum site requirements of this chapter, including the minimum separation distances

contained in Table 3.1 and 12VAC5-630-380 F, the local health department will issue a permit for that site. If a site cannot be located that meets the minimum separation distances listed in Table 3.1 and 12VAC5-630-380 F, the local health department shall identify a site that complies with the minimum separation distances to the greatest extent possible. However, the replacement well shall not be located closer to any source of contamination than the existing well it is replacing. Replacement drinking water wells must meet the sampling requirements of 12VAC5-630-370 D and E.

B. Heat pump wells or commercially dependent wells. If a heat pump well or commercially dependent well must be replaced, the applicant shall propose a replacement site based on the technical requirements of the heat pump system or commercial establishment. The local health department will conduct a sanitary survey of the property and surrounding area to determine if the site meets the minimum site requirements of this chapter including the minimum separation distances contained in Table 3.1 and 12VAC5-630-380 F. If the site meets the minimum requirements of this chapter, the local health department will issue a permit for that site. If a site cannot be located that meets the minimum separation distances listed in Table 3.1 and 12VAC5-630-380 F, the local health department shall identify a site that complies with the minimum separation distances to the greatest extent possible. However, the replacement well shall not be located closer to any source of contamination than the existing well it is replacing. If the replacement heat pump well or commercially dependent well must be placed closer to a sewage disposal system (but no closer than the existing well it is replacing) the well shall be sampled for fecal coliforms. If fecal coliforms are present in the sample and further investigation reveals that the groundwater is contaminated, the well shall be abandoned.

**12VAC5-630-260. Express Class IV construction permits.**

If a Class IV well is proposed for property that does not have an onsite sewage disposal system, either active or inactive, an application may be made for an express Class IV construction permit. An application for an express Class IV construction permit shall be made on a form provided by the district or local health department and approved by the commissioner.

An application shall be deemed completed upon receipt by the district or local health department of a signed and dated application, together with the appropriate fee, containing the following information:

1. The property owner's name, address, telephone number, and personal signature. The owner's signature will acknowledge that the permit will be issued without the benefit of a site visit by the local health department prior to the issuance of the construction permit; that the

permit is being issued based upon the information provided on the accompanying site plan; that the property owner also acknowledges that if the well is found not to comply with the minimum separation distances or any other provision of this chapter, the well must be abandoned at the direction of the local or district health director; and that a variance will not be considered if the improper location of the well is a result of the failure by the owner, his agent, or the well driller to provide complete or accurate information on the site plan submitted with the application or to install the well in accordance with the permit.

2. Address and directions to the property;

3. The proposed use of the well;

4. The name, address, telephone number, Class B (minimum) license number, and signature of the well driller who is to construct the well;

5. A statement signed by the property owner (and not his agent) granting the department access to the site for the purposes of inspecting the property and the well during and after its installation until the well is approved by the department or any required abandonment is completed; and

6. A site plan showing the proposed well site, property boundaries, recorded easements, and accurate locations of actual or proposed sources of contamination (including, but not limited to those listed in Table 3.1) within 100 feet of the proposed well site, and at the option of the applicant a proposed well design. If the proposed well site is located on or at the base of sloping topography, the minimum separation distances shown on the site plan for any sources of contamination within a 60 degree arc slope of the proposed well site must be increased 25 feet for every 5.0% slope.

**12VAC5-630-270. Issuance of express Class IV construction permits and final inspection.**

A. Issuance of express Class IV construction permit. Upon receipt of a complete and approvable application, as defined in 12VAC5-630-260, by a local or district health department with multiple sanitarians, the department shall exercise all due diligence to issue a permit either on the date of receipt or the following business day. If the local or district office has only one assigned sanitarian, the local or district department will exercise all due diligence to issue the permit as soon as possible. Failure by the department to issue the permit within the specified time does not authorize the construction of the well without a permit. If applicable, the applicant shall comply with 12VAC5-630-340 prior to the issuance of the permit.

B. Validity of express Class IV construction permits. Express Class IV construction permits shall only be valid for a period of 30 days from the date of issuance.

C. Inspection. If, upon inspection of the well, it is found that the well location does not comply with the minimum separation distances or any other provision of this chapter, no inspection statement shall be issued and the well shall be immediately abandoned by the property owner in accordance with 12VAC5-630-450 upon notification and direction by the local or district health director. The commissioner shall not grant a variance if the improper location of the well is a result of the failure by the owner, his agent, or the well driller to provide complete or accurate information on the site plan submitted with the application or to install the well in accordance with the permit.

The construction of the well shall also comply with this chapter.

**12VAC5-630-271. Express geothermal well permits.**

A. The issuance of an express geothermal permit is contingent upon proper registration and payment of application fees and applies to the construction of wells used solely for a closed-loop geothermal heating system.

B. A single application and a single fee are required for any geothermal well system. The fee is the same as for a single private well. A registration statement for closed loop construction permitting shall be made on a form provided and approved by the division. The registration shall include the following information:

1. The property owner's name, address, and telephone number;
2. The address of and directions to the property;
3. The proposed use of the well;
4. The name, address, telephone number, and contractor license number of the well driller;
5. A statement signed by the property owner granting the department access to the site for the purpose of inspecting the property and the well during and after the well installation until the well is approved by the department or any required corrections are made;
6. A site plan, drawn to scale, showing the proposed well site or sites, property boundaries, recorded easements, and accurate locations of actual or proposed sources of contamination (including but not limited to those listed in Table 3.1 of 12VAC5-630-380) within 100 feet of the proposed well site or sites; and
7. A statement signed by the licensed well driller that the location and construction of the well or wells will comply with the requirements of this chapter.

C. A single application fee is required for any geothermal well system, regardless of the number of wells included in the system. The fee is the same as for a single private well.

**12VAC5-630-272. Issuance of express geothermal well construction permit, inspection, and final approval.**

A. Issuance of the express geothermal well permit. Upon receipt of a complete registration statement and the appropriate fee, the department will acknowledge receipt of the registration statement and issue the permit with a copy given to the contractor. The construction of the geothermal heating system may begin immediately upon submission of a complete registration statement and counter-signature denoting receipt by the department.

B. Inspection. The department, at its sole discretion, may inspect the closed-loop geothermal well any time after acceptance of the registration statement until after the installation is approved. If, upon inspection of the well, it is found that the well location does not comply with the minimum separation distances or any other provision of this chapter, no inspection statement shall be issued until the deficiencies have been corrected.

C. Final approval. Upon receipt of the Uniform Water Well Completion Report, as required in 12VAC5-630-440, and completion of any inspections deemed necessary to ensure compliance with this chapter, or unless the department has evidence to indicate that the well is not in compliance with the requirements of this chapter, the local health department will provide the owner with a statement that the wells are approved for use.

**12VAC5-630-280. Denial of a construction permit.**

If it is determined that the proposed design is inadequate or that site, geological, hydrological, or other conditions exist that do not comply with this chapter or would preclude the safe and proper operation of a private well system, or that the installation of the well would create an actual or potential health hazard or nuisance, or the proposed design would adversely impact the ground water resource, the permit shall be denied and the owner shall be notified in writing, by certified mail, of the basis for the denial. The notification shall also state that the owner has the right to appeal the denial.

**12VAC5-630-290. Revocation of construction permits or inspection statements.**

The commissioner may revoke a construction permit or inspection statement for any of the following reasons:

1. Failure to comply with the conditions of the permit;
2. Violation of any of this chapter for which no variance has been issued;

3. Facts become known which reveal that a potential health hazard would be created or that the ground water resources may be adversely affected by allowing the proposed well to be installed or completed.

**12VAC5-630-300. Voidance of construction permits.**

Null and void. All well construction permits are null and void when (i) conditions such as house location, sewage system location, sewerage system location, topography, drainage ways, or other site conditions are changed from those shown on the application, (ii) conditions are changed from those shown on the construction permit, or (iii) more than 54 months elapse from the date the permit was issued. Reapplication for the purposes of having an expired permit reissued shall be the responsibility of the owner, and such reapplication shall be handled as an initial application and comply fully with 12VAC5-630-230.

**12VAC5-630-310. Statement required upon completion of construction.**

Upon completion of the construction, alteration, rehabilitation, abandonment or extension of a private well, the owner or agent shall submit to the district or local health department a statement, signed by the contractor, upon the form set out in 12VAC5-630-490, that the well was installed, constructed, or abandoned in accordance with the permit, and further that the well complies with all applicable state and local regulations, ordinances and laws.

**12VAC5-630-320. Inspection and correction.**

No well shall be placed in operation, except for the purposes of testing the mechanical soundness of the system, until inspected by the district or local health department, corrections made if necessary, and the owner has been issued an inspection statement by the district or local health department.

**12VAC5-630-330. Issuance of the inspection statement.**

Upon satisfactory completion of the requirements of 12VAC5-630-310, 12VAC5-630-320, 12VAC5-630-370, 12VAC5-630-430 and 12VAC5-630-440, the commissioner shall issue an inspection statement to the owner. The issuance of an inspection statement does not denote or imply any warranty or guarantee by the department that the private well will function for any specified period of time. It shall be the responsibility of the owner or any subsequent owner to maintain, repair, replace, or to comply with the requirements to abandon any private well.

**12VAC5-630-340. Requirement for easement.**

Whenever a private well subject to this chapter is proposed to be installed on property other than the owner's, an easement in perpetuity shall be recorded with the clerk of the circuit court

prior to issuance of a construction permit. The easement shall be of sufficient area to permit access, construction, placement of the water line, and maintenance of the well.

Part III  
Design and Construction Criteria  
Article 1  
General Requirements

**12VAC5-630-350. General.**

This chapter does not apply to private wells constructed, altered, rehabilitated or extended prior to the effective date of these regulations unless the well construction is modified or expanded after the effective date of these regulations.

The class of well to be constructed shall be determined by the local or district health department or the division.

**12VAC5-630-360. Classes of water wells.**

The following classes of private wells are established for purposes of this chapter. These classes are in addition to those established in the current Commonwealth of Virginia Waterworks Regulations (12VAC5-590-10 et seq.) and are intended for use for private well systems:

1. Class III - Private wells constructed to be used as a source of drinking water. There are three subclasses:

a. Class IIIA - Drilled wells in which the annular space around the casing is grouted to a minimum depth of 20 feet.

(1) The well shall be drilled and cased to a depth of at least 100 feet.

(2) The cased drill hole shall pass through at least 50 feet of collapsing material such as caving sand, gravel or other material that will collapse against the casing.

b. Class IIIB - Drilled wells in which the casing is installed to a minimum depth of 50 feet and the annular space around the casing is grouted to at least 50 feet.

c. Class IIIC - Drilled, bored, driven or jetted wells other than Class IIIA and Class IIIB.

2. Class IV - Private wells constructed for any purpose other than use as a source of drinking water.

**12VAC5-630-370. Water quality and quantity.**

A. Class IV wells exempt. The water quality requirements contained in this section apply only to Class III private wells. Class IV private wells (wells not constructed as a source of drinking water) are not subject to any quality requirements. These regulations contain no well

yield requirements. See 12VAC5-630-460 for suggested minimum well yields for residential supplies.

B. Sample tap. A sample tap shall be provided at or near the water entry point into the system so that samples may be taken directly from the source; this requirement may be met by utilizing the first tap on a line near where the plumbing enters the house (may be a hose bib), provided the tap precedes any water treatment devices.

C. Disinfection. The entire water system including the well shall be disinfected prior to use (12VAC5-630-430 and 12VAC5-630-470).

D. Sampling. After operating the well to remove any remaining disinfectant, a sample of the water from the well shall be collected for bacteriological examination. The sample may be collected by the owner, well driller, or other person in accordance with procedures established by the department and provided the sample is submitted to a private laboratory certified by the Department of General Services, Division of Consolidated Laboratory Services, for analysis.

E. Test interpretation. A Class III private well shall be considered satisfactory if the water sample(s) test(s) negative for coliform organisms as described in subdivision 1 or 2 below. Sources with positive counts shall be tested as described in subdivision 3 below to determine if the water supply is amenable to continuous disinfection (chlorination). Samples that exhibit confluent growth shall be considered inconclusive and another sample shall be collected.

1. Where a private well has no unsatisfactory water sample within the previous 12 months, one water sample which tests negative for coliform bacteria shall be considered satisfactory for coliform organisms.

2. Where a private well has had one or more positive water samples within the past 12 months for coliform bacteria, at least two consecutive samples must be collected and found negative for coliform organisms before the supply may be considered satisfactory for coliform organisms. The samples must be collected at least 24 hours apart and the well may not be disinfected between samples.

3. When a private well does not test satisfactory for coliform organisms continuous disinfection may be recommended to the homeowner if the water supply is found to be suitable for continuous disinfection. A minimum of 10 samples shall be collected and tested for total coliform using an MPN methodology. The geometric mean of the samples shall be calculated and if the result is less than 100 organisms per 100 ml, the supply shall be considered satisfactory for continuous disinfection.

F. Water treatment. If tests indicate that the water is unsatisfactory and no other approvable source is available, adequate methods of water treatment shall be applied and demonstrated to be effective pursuant to 12VAC5-630-370 E 3 prior to the issuance of an inspection statement. The district or local health department shall be consulted when treatment is necessary.

**12VAC5-630-380. Well location.**

A. Sanitary survey. Any obvious source of toxic or dangerous substances within 200 feet of the proposed private well shall be investigated as part of the sanitary survey by the district or local health department. Sources of contamination may include, but are not limited to, items listed in Table 3.1, abandoned wells, pesticide treated soils, underground storage tanks, and other sources of physical, chemical or biological contamination. If the source of contamination could affect the well adversely, and preventive measures are not available to protect the ground water, the well shall be prohibited. The minimum separation distance between a private well and structures, topographic features, or sources of pollution shall comply with the minimum distances shown in Table 3.1. Where the minimum separation distances for a Class IV well cannot be met, a permit may be issued under this chapter for a well meeting all of the criteria in 12VAC5-630-400 and 12VAC5-630-410 and the separation distance requirements for either a Class IIIA or IIIB well, without deviation, and such Class IV well shall not be required to meet the water quality requirements of 12VAC5-630-370.

**TABLE 3.1 DISTANCES (IN FEET) BETWEEN A WELL AND A STRUCTURE OR TOPOGRAPHIC FEATURE**

Structure or Topographic Feature	Class IIIC or IV	Class IIIA or B
Building foundation	10	10
Building foundation (termite treated)	50 <sup>1</sup>	50 <sup>1</sup>
House sewer line	50 <sup>2</sup>	50 <sup>2</sup>
Sewer main, including force mains	50 <sup>3</sup>	50 <sup>3</sup>
Sewerage system	50	50
Pretreatment system (e.g. septic tank, aerobic unit, etc.)	50	50
Sewage disposal system or other contaminant source (e.g., drainfield, underground storage tank, barnyard, hog lot, etc.)	100	50
Cemetery	100	50
Sewage Dump Station	100	50 <sup>1</sup>

<sup>1</sup>See 12VAC5-630-380

<sup>2</sup>Private wells shall not be constructed within 50 feet of a house sewer line except as provided below. Where special construction and pipe materials are used in a house sewer line to provide adequate protection, and the well is cased and grouted to the water bearing formation, all classes of private wells may be placed as close as 10 feet to the house sewer line. Special construction for house sewer lines constitutes cast iron pipe with water-tight caulked joints or mechanical joints using neoprene gaskets, or solvent welded Schedule 40 or better polyvinyl chloride (PVC) pipe. It is the responsibility of the applicant to provide documentation from the contractor that such construction and pipe materials have been installed. In no case shall a private well be placed within 10 feet of a house sewer line.

<sup>3</sup>Private wells shall not be constructed within 50 feet of a sewer main except as provided below. Where special construction and pipe materials are used in a sewer main to provide adequate protection, and the well is cased and grouted to the water bearing formation, Class III wells may be placed as close as 35 feet to a sewer main and Class IV wells as close as 10 feet. Special construction for sewer mains constitutes ductile iron pipe with water-tight joints, solvent welded Schedule 40 or better polyvinyl chloride (PVC) pipe (SDR-35 plastic PVC with neoprene gaskets). It is the responsibility of the applicant to provide documentation from the local building official or sanitary district that such construction and pipe materials have been installed. In no case shall a Class III well be placed within 35 feet of a sewer main. Likewise, in no case shall a Class IV well be placed within 10 feet of a sewer main.

B. Downslope siting of wells from potential sources of pollution. Special precaution shall be taken when locating a well within a 60 degree arc directly downslope from any part of any existing or intended onsite sewage disposal system or other known source of pollution, including, but not limited to, buildings subject to termite or vermin treatment, or used to store polluting substances or storage tanks or storage areas for petroleum products or other deleterious substances. The minimum separation distance shall be: (i) increased by 25 feet for every 5.0% of slope; or (ii) an increase shall be made to the minimum depth of grout and casing in the amount of five feet for every 5.0% of slope.

C. Sites in swampy areas, low areas, or areas subject to flooding. No private well covered by this chapter shall be located in areas subject to the collection of pollutants such as swampy areas, low areas, or areas subject to flooding. Wells located in flood plains shall be adequately constructed so as to preclude the entrance of surface water during flood conditions. At a minimum, such construction will include extending the well terminus 18 inches above the annual flood level. Other requirements may be made as determined on a case by case basis by the division.

D. Property lines. There is no minimum separation distance between a private well and a property line established by this chapter. The owner is responsible for establishing a separation distance from property lines such that the construction and location of the well will be on the owner's property and comply with any local ordinances.

E. Utility lines. There is no minimum separation distance between a private well and utility lines (electric, gas, water, cable, etc.). The minimum separation distance may, however, be established by the individual utility company or local ordinance.

F. Pesticide and termite treatment. No Class III private well shall be placed closer than 50 feet from a building foundation that has been chemically treated with any termiticide or other pesticide. No Class IV private well shall be placed closer than 50 feet to a building foundation that has been chemically treated with any termiticide or other pesticide except as provided below. Further, no termiticides or other pesticides shall be applied within five feet of an open water supply trench. A Class IV well may be placed as close as 10 feet to a chemically treated foundation if the following criteria are met:

1. The aquifer from which the water is withdrawn must be a confined aquifer (i.e., there must be an impermeable stratum overlying the water bearing formation).
2. The well must be cased and grouted a minimum of 20 feet or into the first confining layer between the ground surface and the water bearing formation from which water is

withdrawn, whichever is greater. When the first confining layer is encountered at a depth greater than 20 feet, the well shall be cased and grouted to the first confining layer between the ground surface and the water bearing formation from which water is withdrawn.

3. The material overlaying the confined aquifer must be collapsing material.

G. Exception for closed-loop ground-source heat pump wells. Closed-loop ground-source heat pump wells, depending upon construction, may not have to comply with the minimum separation distances for Class IV wells listed in Table 3.1. If the well is grouted 20 feet, the minimum separation distances must comply with those listed for Class IV wells. If the well is grouted a minimum of 50 feet, the separation distances shall be those listed for Class IIIA or IIIB wells. If the well is grouted the entire depth of the well, the well does not have to comply with the minimum separation distances contained in Table 3.1.

**12VAC5-630-390. Site protection.**

A. No objects, articles, or materials of any kind which are not essential to the operation of the well shall be placed or stored in a well house, on the well head or well pump or water treatment system, or within close proximity to them.

B. Fencing of an area around the well, or the placement of other barriers or restrictions, may be required as a condition of the permit under certain circumstances, such as to prohibit livestock access to the well head or to prohibit vehicles from damaging or polluting the area around the well head.

C. The area around the well shall be graded to divert surface water away from the well.

**12VAC5-630-400. Materials.**

A. General. All materials used in private wells shall have long-term resistance to corrosion and sufficient strength to withstand hydraulic, lateral and bearing loads.

B. Casing. Materials used for casing shall be watertight and shall consist of wrought iron, concrete tile, clay tile, steel, stainless steel or plastic, all designed for water well use or other suitable materials as determined by the division. The division shall maintain a list of approved casing materials.

1. Driven casings shall consist of ductile iron, steel or stainless steel and shall be equipped with a suitable drive boot.

2. Casings used for Class IIIA or IIIB wells shall be steel, stainless steel or plastic.

C. Screens. Where utilized, screens shall be constructed of stainless steel, plastic or other suitable materials as determined by the division. Screens shall be constructed of materials which will not be damaged by any chemical action of the ground water or future cleaning operations. Additionally, screens shall be constructed of materials which will not degrade ground water quality.

D. Joints. Joints shall be watertight and mechanically sound. Welded joints shall have smooth interior surfaces and shall be welded in accordance with acceptable welding practice.

E. Gravel. Gravel utilized for gravel packed wells shall be uniformly graded, cleaned, washed, disinfected and of a suitable size.

**12VAC5-630-410. Construction; general.**

A. Casing.

1. Class IIIA wells shall be cased to a depth of at least 100 feet.

2. Class IIIB wells shall be cased to a depth of at least 50 feet.

3. Except as provided in subdivisions a through e below, all Class IIIC and IV wells shall be cased to a minimum depth of 20 feet or terminated not less than one foot in bedrock when bedrock is encountered at a depth less than 20 feet.

a. When in collapsing material, the casing shall terminate in the aquifer but in no instance be less than 20 feet.

b. Where an aquifer is encountered at less than 20 feet, Class IV wells may be cased to within one foot of the water bearing strata. In the instance of Class IV wells the intent of this chapter is to protect ground water quality, and not to ensure a potable water supply.

Exception: Class IV wells placed closer than 50 feet from a building foundation treated with a chemical termiticide or other pesticide shall comply with the minimum casing depth requirements of 12VAC5-630-380 F 2.

c. Alternate casing depths may be accepted for bored wells when the only aquifer lies between 11 and 20 feet provided the casing is placed within one foot of the aquifer and must not be less than 10 feet in depth from the ground surface.

d. Class III C driven wells shall be cased to the water bearing strata; however, in no case less than 10 feet. No minimum casing requirements apply to Class IV driven wells except that in order to protect ground water they shall be capable of meeting the minimum grouting requirements as described in subdivision C 5 e of this section.

e. Closed-loop ground-source heat pump wells do not have to be cased.

4. All private well casings shall be extended at least 12 inches above ground or 12 inches above a concrete floor in well house with a gravity flow drain. The following wells are exempted from this requirement; however, their location shall be permanently marked for easy location in the future:

a. Drilled shallow well suction pump systems that will not operate unless a vacuum is maintained. The casings for these wells are also the suction lines through which water is drawn.

b. Deep well ejector pump systems that utilize a casing adaptor and must maintain a vacuum to operate.

c. Closed-loop ground-source heat pump wells.

d. Heat pump return wells that are completely sealed.

5. All steel casings shall meet or exceed the material specifications found in 12VAC5-630-480.

6. No plastic well casing shall be installed which will exceed 80% of its RHCP (resistance to hydraulic collapse pressure). When experience has shown, in the division's opinion, that the prevailing geologic conditions are subject to collapse or shifting, or where heavy clay or unstable backfill materials occur, plastic well casings may not exceed 50% of the RHCP rating. It shall be the responsibility of the well driller to submit calculations to the division demonstrating that individual well casings do not exceed these ratings.

B. Screens. When used for the prevention of entry of foreign materials, screens shall be free of rough edges, irregularities, or other defects. A positive watertight seal between the screen and the casing shall be provided when appropriate.

C. Grouting.

1. General. All private wells shall be grouted. It is preferred that no openings are made in the side of the well casing.

2. Purpose. The annular space between the casing and well bore is one of the principal avenues through which undesirable water and contaminants may gain access to a well. The goal of grouting a well is to preclude the entrance of undesirable water and contaminants. Therefore, the annular space shall be filled with a neat cement grout, a mixture of bentonite and neat cement or bentonite clay grout specifically approved by the manufacturer for use as a grouting material.

3. Specifications. The grouting material used shall meet the appropriate specification listed below:

a. Neat cement grout shall consist of cement and water with not more than six gallons of water per bag (94 pounds) of cement.

b. Bentonite clay may be used in conjunction with neat Portland cement to form a grouting mixture. The bentonite used must be specifically recommended by the manufacturer as being suitable for use as a well grout material and cannot exceed 6.0% by weight of the mixture.

c. Bentonite clay used for grouting shall be sodium bentonite with a minimum of 20% clay solids by weight of water. The bentonite clay shall be specifically recommended by the manufacturer for use as a grouting material.

Exception: (i) When exceptional conditions require the use of a less fluid grout, to bridge voids, a mixture of cement, sand and water in the proportion of not more than two parts by weight of sand to one part of cement with not more than six gallons of clean water per bag of cement may be used if approved by the district or local health department, or (ii) for bored wells only, a concrete (1-1-2 mix with all aggregates passing a ½-inch sieve) grout with not more than six gallons of clean water per bag of cement may be used provided a minimum three-inch annular space is available and its use approved by the district or local health department.

In cases where an open borehole has been drilled below the depth to which the casing is to be grouted, the lower part of the hole must be backfilled, or a packer must be set in the hole, to retain the slurry at the desired depth. Backfilling the hole with gravel and capping with sand is an acceptable practice. Material ordinarily sold as plaster or mortar sand is usually satisfactory; more than half the sand should be of grain sizes between 0.012 inches and 0.024 inches.

4. Other materials. Other grouting materials may be approved by the division on a case by case basis. Review and approval shall be based on whether the proposed material can consistently be expected to meet the intent of grouting expressed in 12VAC5-630-410 C 2. The proposed material must be an industry acceptable material used for the purpose of grouting water wells.

5. Depth.

a. All Class IIIA wells shall be grouted to a minimum depth of 20 feet.

b. All Class IIIB wells shall be grouted to a minimum depth of 50 feet.

c. All Class IIIC and Class IV wells shall be grouted to a minimum depth of 20 feet when the casing depth is equal to or greater than 20 feet. When the casing depth is less than 20 feet, the casing shall be grouted in accordance with this subsection, from the lower terminus of the casing to the surface.

Exception: Class IV wells placed closer than 50 feet from a building foundation treated with a chemical termiticide or other pesticide shall comply with the minimum grouting depth requirements of 12VAC5-630-380 F 2.

d. Alternate grouting depths may be accepted for bored wells when the only aquifer suitable for a private well lies between 11 and 20 feet provided the grouting shall terminate at least one foot above the aquifer but must not be less than 10 feet in depth from the ground surface.

e. Driven wells shall be grouted to a minimum depth of five feet by excavating an oversize hole at least four inches in diameter larger than the casing and pouring an approved grout mixture into the annular space.

6. Installation. Grout shall be installed by means of a grout pump or tremie pipe from the bottom of the annular space upward in one operation until the annular space is filled, whenever the grouting depth exceeds 20 feet. Pouring of grout is acceptable for drilled wells whenever grouting depth does not exceed 20 feet. Pouring of grout is acceptable for bored wells whenever the grouting depth does not exceed 30 feet provided there is a minimum of a 3-inch annular space. Grouting shall be brought to the ground surface and flared to provide a one foot radius around the casing at least six inches thick. However, whenever pitless adapters are used, the grout shall terminate at the base of the pitless adapter. When an outer casing is necessary to construct a new well, where possible, the outer casing shall be pulled simultaneously with the grouting operation.

7. Annular space. The clear annular space around the outside of the casing and the well bore shall be at least 1.5 inches on all sides except for bored wells which shall have at least a 3-inch annular space.

D. Additional casing and grouting. When a well is to be constructed within 100 feet of a subsurface sewage disposal system, which has been or is proposed to be installed at a depth greater than five feet below the ground surface, the casing and grouting of the water well shall be increased to maintain at least a 15-foot vertical separation between the trench bottom and the lower terminus of the casing and grouting.

E. Well head.

1. General. No open wells or well heads or unprotected openings into the interior of the well shall be permitted. Prior to the driller leaving the well construction site, the owner shall have the driller protect the bore hole by installing a cover adequate to prevent accidental contamination.

2. Mechanical well seals. Mechanical well seals (either sanitary well seals or pitless adapters) shall be used on all wells and shall be water and air tight except as provided in 12VAC5-630-410 F 4.

3. Other. Wells greater than eight inches in diameter shall be provided with a watertight overlapping (shoebox) type cover, constructed of reinforced concrete or steel.

F. Appurtenances passing through casing.

1. General. All openings through well casings shall be provided with a positive water stop.

2. Pitless well adapters. Pitless well adapters shall be subject to approval by the division. All pitless adapters shall be installed according to the manufacturers recommendations.

3. Sanitary well seals. Sanitary well seals shall be subject to approval by the division. All sanitary well seals shall be installed according to the manufacturers recommendations.

4. Venting. Venting, where necessary as determined by the district health department, shall be provided in such a manner as to allow for the passage of air, but not water, insects, or foreign materials, into the well.

#### **12VAC5-630-420. Observation, monitoring, and remediation wells.**

A. Except as provided in subsections B and C of this section, observation and monitoring wells are exempted from this chapter.

B. Observation or monitoring wells shall be constructed in accordance with the requirements for private wells if they are to remain in service after the completion of the ground water study.

C. Observation or monitoring wells shall be properly abandoned in accordance with 12VAC5-630-450 within 90 days of cessation of use.

#### **12VAC5-630-430. Disinfection.**

All Class III private wells shall be disinfected before placing the well(s) in service. Disinfection shall be accomplished by maintaining a 100 mg/l solution of chlorine in the well for 24 hours utilizing the dosage rates set forth in 12VAC5-630-470.

#### **12VAC5-630-440. Information to be reported.**

A copy of a Uniform Water Well Completion Report (see 12VAC5-630-490) shall be provided to the district or local health department within 30 days of the completion of the well or completion of alterations thereto.

#### **12VAC5-630-450. Well abandonment.**

A. Well abandonment is governed jointly by the Department of Environmental Quality and the Department of Health pursuant to § 62.1-44.92(6) of the Ground Water Act of 1973 (Repealed). In addition, the abandonment of any private well governed by this chapter, or any private well abandoned as a condition of a permit issued under this chapter, shall be administered by the Department of Health in conformance with this section.

B. A temporarily abandoned well shall be sealed with a water-tight cap or well head seal. Such a well shall be maintained so that it will not be a source or channel for contamination to ground water during temporary abandonment.

C. Permanent abandonment. The object of proper permanent abandonment is to prevent contamination from reaching ground water resources via the well. A permanently abandoned well shall be abandoned in the following manner:

1. All casing material may be salvaged.
2. Before the well is plugged, it shall be checked from land surface to the entire depth of the well to ascertain freedom from obstructions that may interfere with plugging (sealing) operations.
3. The well shall be thoroughly chlorinated prior to plugging (sealing).
4. Bored wells and uncased wells shall be backfilled with clean fill to the water level. A two-foot-thick bentonite plug shall be placed immediately above the water level. Clean fill shall be placed on top of the bentonite plug and brought up to at least five feet from the ground surface. The top five feet of the well casing, if present, shall be removed from the bore hole. In an open annular space is present around the well casing, the annular space shall be filled with grout to the maximum depth possible, but less than or equal to 20 feet. A one-foot-thick cement or bentonite grout plug that completely fills the bore void space shall be placed a minimum of five feet from the ground surface. The remaining space shall be filled with clean fill which is mounded a minimum of one foot above the surrounding ground surface. Bored wells or uncased wells abandoned in this manner shall be treated as wells with respect to determining the minimum separation distance to sources of contamination listed in Table 3.1. The location of these wells shall be permanently marked for future location.
5. Wells constructed in collapsing material shall be completely filled with grout or clay slurry by introduction through a pipe initially extending to the bottom of the well. Such pipe shall be raised, but remain submerged in grout, as the well is filled.

6. Wells constructed in consolidated rock formations or which penetrate zones of consolidated rock may be filled with sand or gravel opposite the zones of consolidated rock. The top of the sand or gravel fill shall be at least five feet below the top of the consolidated rock and at least 20 feet below land surface. The remainder of the well shall be filled with grout or clay slurry.

7. Other abandonment procedures may be approved by the division on a case by case basis.

8. Test and exploration wells shall be abandoned in such a manner to prevent the well from being a channel for the vertical movement of water or a source of contamination to ground water.

9. When bored wells are bored and a water source is not found, and the casing has not been placed in the bore hole, the bore hole may be abandoned by backfilling with the bore spoils to at least five feet below the ground surface. A two-foot-thick bentonite grout plug shall be placed at a minimum of five feet from the ground surface. The remainder of the bore hole shall be filled with the bore spoils.

**12VAC5-630-460. Water system yields for residential use wells.**

A. All drinking water systems that utilize one or more Class III wells shall be capable of supplying water in adequate quantity for the intended usage. All such systems, with a capacity less than three gallons per minute, shall have a capacity to produce and store 150 gallons per bedroom per day and be capable of delivering a sustained flow of five gallons per minute per connection. Systems with a capacity of three gallons per minute or more do not require additional storage.

B. The certified water well systems provider shall certify the storage capacity and the yield of the well on the Uniform Water Well Completion Report.

**12VAC5-630-470. Chlorination dosage rates.**

Casing Diameter (Inches)	Volume per 100 Feet (Gallons)	70% Sodium Hypochlorite (Oz. Dry Wt.)	5% Sodium Hypochlorite (Liquid Meas.)
2	16	0.5	4 oz.
4	65	2	18 oz.
6	147	4	40 oz.
8	261	6	4.25 pts.
10	408	8	7 pts.
12	588	12	10 pts.
16	1045	20	2 gal.
20	1632	32	3.3 gal.
24	2350	48	4.67 gal.
30	3672	70	7.3 gal.
36	5288	101	10.5 gal.

**12VAC5-630-480. Well casing specifications.**

Steel Casings				
Nom. Size (inches)	Weight (lbs./ft.)	Thickness (inches)	External Diameter	Internal Diameter
4	10.79	.188	4.5	4.026
6	13.00	.188	6.625	6.25
8	24.70	.277	8.625	8.071
10	31.20	.279	10.75	10.192