

SECTION 1 - - GENERAL PROVISIONS

1.01--Statutory Authority

The Shelby County Ground Water Quality Control Board establishes and adopts the following regulations in accordance with the authority granted by the ordinances of Shelby County and the municipalities therein which established the Shelby County Ground Water Quality Control Board.

1.02 --Scope and Applicability

A. Minimum requirements are hereby prescribed in these Rules and Regulations governing the location, design, installation, use, disinfection, modification, repair and abandonment of water wells and associated pumping equipment, or any other type of well. No person shall conduct any activity contrary to the provisions of these regulations, and all such activities, which are contracted for, shall be carried out only by those persons having a valid Tennessee License for Water Well Drillers, and Pump Installers. These regulations supersede all other well construction regulations.

B. These regulations apply to well construction activities from the initial penetration or excavation of the ground, through development, modification, equipment installation, repair and disinfection. Set up of construction equipment before actual penetration or excavation is not considered part of the construction.

C. The regulations apply to the construction activities of any and all types of wells.

D. The installation of all wells or other activities conducted for the purpose of obtaining geologic or hydrologic information shall receive prior approval from the Department in the form of a Well Construction Permit.

E. Amendments may be made to inspection and permit fees to reflect the reasonable cost of services provided by the Shelby County Health Department and to establish well water conservation fees as a means of controlling the usage of water or waste of groundwater by way of private wells.

F. As set forth in the enabling legislation for this Board, these rules do not apply to wells owned and operated by the municipalities to provide a public water supply.

1.03 --Health Department Powers and Duties

The Department has general supervision and authority: over the location, construction, repair, and modification of water wells and all other types of wells and for the administration of these Rules and Regulations. The Board shall adopt and amend rules and regulations; establish policies declared by these Rules and Regulations and establish policies reasonably necessary to effectuate the statement of policy declared by these

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Rules and Regulations. Such rules, regulations and policies shall provide criteria for the proper location and construction of any type of well in Shelby County; to safeguard the public health against problems which pertain to groundwater quality; and for the protection and conservation of groundwater. The Board shall conduct public hearings, upon not less than thirty (30) days prior notice, in connection with proposed rules and regulations and amendments thereto; and exercise such other powers as are practical and reasonably necessary to carry out and enforce the provisions of these Rules and Regulations.

1.04 - Rules of Interpretation

A. Whenever in these rules, a certain number of days is used to establish a time limit or deadline, it shall be based on calendar days, unless specifically indicated otherwise.

SECTION 2 --SHORT TITLE

Shelby County Well Construction Code

SECTION 3 --DEFINITIONS

3.01 --Abandoned Well: Any type of well that has been permanently discontinued for further use. A well shall be declared abandoned when the pump has been disconnected or removed for reasons other than repair or replacement; when the well is in such a state of disrepair that continued use for the purpose intended is impracticable; or when the well is not maintained in such a condition that allows for periodic sampling and testing by the Department.

3.02 --Abandonment: The act of properly sealing an abandoned well.

3.03 -- Adequate Public Water Supply: A determination by the public water utility serving a location, that it can currently supply, or can and will make the necessary system upgrades, to supply the quantity of water determined by a private user needed for their use.

3.04 -- Aggrieved Person: Anyone affected by a decision, ruling, requirement, rule regulations or order of the Board or the Department that can show a property interest or is an adjoining property owner, commentator in the public comment process or anyone who can demonstrate a direct economic interest in the actions of the Board or the Department.

3.05 -- Agricultural Well: A well constructed for the primary purpose of providing a source of water for agriculture.

3.06 --Agriculture: The term agriculture is defined as the art of being engaged in farming as the leading pursuit and includes cultivating the soil; producing crops; silviculture, growing sod, and/or raising livestock, poultry, or fish; and in varying degrees the preparation of these products for human use.

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3.07 --Aquifer: A geologic formation, group of formations or part of a formation capable of yielding a significant amount of groundwater to wells, springs, or surface water in Shelby County.

3.08 --Auxiliary Intake: Any source of water system, piping, connection, or device whereby water may be secured other than that normally used.

3.09 --Bentonite Grouts: A Bentonite grout shall consist of a high solid sodium montmorillonite. The grout shall yield solids ranging from twenty to thirty (20-30%) percent, with a minimum density equal to or greater than 9.4 pounds per gallon, and a permeability of approximately 1×10^{-7} centimeters per second or less. The manufacturer's mixing instructions shall be followed and any polymer added to bentonite slurry mixes must be approved by the Department prior to use.

3.10 --Best Available Control Technology: Maximum degree of groundwater conservation achievable through the currently available methods, considering energy consumption, regional groundwater impacts, and economic costs.

3.11 --Board: The Ground Water Quality Control Board for Shelby County.

3.12 --Class A Well – A water production well that is designed to withdraw 250 gpm or more from the aquifer.

3.13 --Class B Well – A water production well that is designed to withdraw less than 250 gpm of water from the aquifer.

3.14 --Commercial Well (Non-potable): A well constructed for the purpose of providing groundwater to a commercial business, facility, or premise for air conditioning, and other heat exchange systems; sprinkler systems for landscaping and other land beautification uses; nurseries; filling and retaining levels of lakes in subdivisions, apartment complexes, and similar multiple dwelling facilities; and any other such commercial uses.

3.15 --Commercial Well (Potable): A well constructed for the purpose of providing groundwater to a commercial business, facility or premises for use as a potable water supply when public water is not available.

3.16 --Contaminated Well: Any type of well containing a foreign substance, either chemical, radiological, or biological, which tends to degrade the quality of the water to constitute a hazard or impair the usefulness of the water.

3.17 --Contamination: Alteration of the physical, chemical, or biological quality of the water so that it is harmful or potentially injurious to the health of the users or for the intended use of the water.

3.18 --Continual Groundwater Discharge: A use of groundwater, which results in the direct release of that water to the environment without any attempt to recycle, reuse or minimize that release.

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3.19 --Cross Connection: An actual or potential connection, arrangement or condition by or through which a supply of potable water could be contaminated, polluted or infected.

3.20 --Delinquent: Unpaid or past due well fees that are subject to additional fees or penalties.

3.21 --Department: The Shelby County Health Department.

3.22 --Dewatering or Drainage Well: A well constructed for the primary purpose of lowering the water table for the construction of footings, sewer lines, building foundations, elevator shafts, etc.

3.23 --Domestic Well: A well constructed for the primary purpose of providing potable water to a single-family residence.

3.24 --Emergency: Unforeseen circumstances that exist beyond the control of the applicant.

3.25 --Geothermal Well: A well constructed for the primary purpose of adding or removing heat (British Thermal Units BTU) from groundwater for heating or cooling purposes.

3.26 --Groundwater: Water occurring naturally in underground formations that are saturated with water and includes but is not limited to perched water tables and aquifers or zones that are seasonally, periodically or permanently saturated.

3.27 --Groundwater Heat Pump: Any mechanical device used for heating or cooling, which adds or removes heat (British Thermal Units BTU) from groundwater.

3.28 --Grout: A stable, impervious, minimum-shrinkage bonding material that is capable of producing a watertight seal required to protect against the intrusion of contamination.

3.29 --Health Director: The Director of the Shelby County Health Department.

3.30 --Industrial Well: A well constructed for the purpose of providing groundwater for use in processing, washing, packaging or manufacturing of a product, not intended for human consumption.

3.31 --Injection Well: A structure or device, which is used for the emplacement of fluids into a subsurface stratum including, but not limited to:

- (a) A well used for emplacement of fluids;
- (b) A subsurface fluid distribution system;
- (c) An improved sinkhole;
- (d) An infiltration cell and any other structures or devices designed, constructed or used to emplace fluids into the subsurface, except as provided in Tennessee Regulations Rule 0400-45-06-.02; or
- (e) A modified recharge point.

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3.32 --Irrigation Well: A well constructed for the primary purpose of providing a source of water by way of sprinklers, artificial ditches or channels, or by any other means for use in nurseries, golf courses, land beautification, greenhouses, and any other such uses.

3.33 --Justifiable Need: A genuine need for a private water supply as determined by the Board and, which need is based upon the documented lack of an adequate public water supply to the premise - or from an existing well on the premises that can supply the needed volume of water.

3.34 --Mandated Remediation Site: Any property or groups of properties at which groundwater investigation or remediation is required by a local, state or federal agency.

3.35 --Modification: Alteration, rework or repair involving a material change in the design or construction of a well including but not limited to deepening, reaming, casing, re-casing, perforating, re-perforating, installation of liner pipe, packers and seals, screen removal and replacement, or redeveloping a well by surging, chemical treatment, jetting, etc.

3.36 --Monitoring Well: A well constructed for monitoring groundwater quality and/or water level.

3.37 --Municipality: A political unit having corporate status and powers of self-government and includes any other form of government within the political jurisdiction of Shelby County.

3.38 --Observation Well: A well constructed for the primary purpose of obtaining accurate, periodic measurements of groundwater.

3.39 --Owner: Any person or his legal representative, agent, or assign who owns, leases, operates, or controls any parcel of land where a well is or may be located.

3.40 --Permit: An official document issued by the Department granting the specific activity set forth in the document.

3.41 --Person: Any individual, firm, association, organization, partnership, business, institution, enterprise, municipality, commission, political subdivision or duly established entity, trust, corporation, company, contractor, supplier, installer, user or owner, or any Federal, State or Local government agency or public district or any officer or employee thereof.

3.42 --Potable Water Supply: Any source of water which is satisfactory for drinking, culinary, and domestic purposes, and meets the requirements of the TDEC and the Department.

3.43 --Premise: A tract of land and any buildings thereon.

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3.44 --Private Water Supply: Any groundwater supply located on a premise that is not obtained from a public water system.

3.45 --Public Water Supply: Any water system operating as a public utility or municipal water system which has a valid Public Water System Identification (PWSID) number by the Tennessee Department of Environment and Conservation.

3.46 --Pump Installer: Any person who is properly licensed and installs or repairs water well pumps or who installs filters and water treatment devices.

3.47 --Quasi-Public Water Supply: A water supply provided by a private well where a public water supply is not available. It is used or made available by a person to his employees, tenants, members or guests for drinking; or in connection with the manufacturing or handling of ice, foods, or drinks.

3.48 --Reasonable Use: That use of water which is ordinarily required by industries, firms, and individuals in the usual operation of their business or residence but not without limitation as determined by the Groundwater Quality Control Board pursuant to Section ~~4.02 E. and~~ 5.01 A. and 11.

3.49 --Recovery Well: A well constructed for the purpose of recovering products which have intersected the water table by way of leaking underground storage tanks, surface spills, etc.

3.50 --Site: Any one legal unit of a subdivision, parcel of land, or location where drilling activities are to take place.

3.51 --Soil Boring: Any hole that is drilled, cored, dug, washed, driven, jetted, redrilled, bored, or otherwise constructed, which exceeds thirty (30) feet in depth, for any purpose.

3.52 --Temporary Abandonment: Means any type of production well covered with a secure cap that is water tight and which is being used for the investigation or management of groundwater by a governmental agency.

3.53 --Test Well : Any excavation, either cased or uncased, that is constructed for the purpose of determining the location or physical characteristics of underground formations or for evaluating or monitoring the characteristics or behavior of the formations or the water contained therein, or for obtaining the information needed to design a well prior to its construction.

3.54 --Utilities: Any power lines or underground cables which supply electrical power, telephone lines, cable television lines, natural gas lines, water mains, water lines, or sewer lines.

Commented [RB1]: 1.02 refers to fees while Section 11 is about Limitations on Use of groundwater.

Commented [HA2]: Given the recent appeal for replacement wells, is there any value in including a definition for replacement wells?

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3.55 --Water Well: Wells which are constructed and equipped with casings, screens, pumps, fittings, etc., and have been developed for the primary purpose of producing a supply of water.

3.56 --Water Well Contractor: Any person, firm, or corporation who has duly registered as such with the State of Tennessee and shall have paid the annual registration fee and obtained a permit to contract for construction of wells as therein provided and, who has obtained the necessary privilege license to construct, repair, and service wells in Shelby County.

3.57 --Well: A well is any hole that is drilled, cored, dug, washed, driven, jetted, redrilled, bored, or otherwise constructed which intersects the water table for: the production of water; monitoring of contaminants; recovering product; dewatering or drainage purposes; determining water levels; lowering the water table; or any soil boring into the subsurface thirty (30) feet or deeper.

3.58 --Well Construction: Any type of work that is performed on a well including but not limited to, the installation of new wells; the modification, alteration, or their abandonment.

3.59 --Well Driller: Any person who manages or supervises the digging, drilling or redrilling of well.

3.60 --Well Logs: A record of geologic formations penetrated in drilling a water well, monitoring, recovery, dewatering, observation or any other type of well; or any boring into the subsurface thirty (30) feet or deeper.

3.61 --Well Repair: Any work performed on an existing well or its equipment to return it to its proper functioning, including but not limited to pump replacement or any work which requires breaking of the seal on a water production well.

SECTION 4 - GENERAL REQUIREMENTS AND PROCEDURES

4.01 --Applications

A. Any person requesting the installation, modification, repair, or abandonment of a water well or any other type well shall make application to the Department.

B. All applications requesting new well installation or the modification of an existing well shall be accompanied by a plot plan showing the location of all underground utilities within fifty (50) feet of the proposed well; grade elevations in relation to adjoining areas and drainage patterns of the area; location of the residence, business, etc.; locations of septic tanks and field lines when applicable; other existing and proposed buildings and structures; any water service lines that may exist on the premises; any drainage ditches, lakes, ponds, streams, etc., that may exist at the premise; any roads or dedicated right-of-ways or easements; and any other pertinent information deemed necessary by the Department. The application shall also include a sketch of how the well is to be constructed.

C. A water well cannot be sited or placed in service within a half-mile of the designated

boundaries of a mandated or voluntary remediation site involving groundwater contamination or potential contamination, unless the applicant can make a demonstration that the well will not enhance the movement of contaminated groundwater or materials into the aquifer. Existence of contamination or potential contamination is to be determined by contacting the Tennessee Department of Environment and Conservation (TDEC) Memphis Field Office and requesting a list of impacted sites or TDEC sites within a half mile radius of the potential well location.

D. A processing fee shall be submitted with all applications for new wells and said fee is not refundable, regardless of the status of approval.

E. The Department shall issue a notice of rejection whenever it determines that an application for a permit fails to meet the requirements of these Rules and Regulations, or any rules, order, regulation or standard adopted pursuant thereto; or that the proposed well will be harmful to the groundwater resources of Shelby County or, if an adequate water supply is available to the premise without the need to construct a well. Said water supply may be from an existing water well or from a public water system.

4.02 -- Permits Required

A. A permit shall be obtained from the Department prior to beginning the installation, modification, repair, or abandonment of a water well or any other type of well, soil boring or pumping equipment within Shelby County.

B. The issuance of a construction permit is dependent upon:

1. the application being on the proper form and containing the required information, provided that the proposed construction or repair will not be contrary to applicable laws, rules, orders, or regulations of the Department or other government agencies;
2. additional information which may be required as the Department deems necessary such as geophysical logs, geologic samples and logs, and well pumping tests; and
3. the justifiable need for a well.

C. If a well application is approved by the Department, the well driller shall be issued a permit. Receipt of the permit by the applicant shall constitute permission to begin well construction or repair once the Department has received notice of the applicant's intent to commence the activity as required by these rules.

D. Any application to conduct an emergency repair or install any type remediation structure, other than a Class A water well, or to repair a well may be applied for by telephone when emergency conditions exist which would justify such a request. The Department may, at its discretion, grant such emergency permits with an additional fee of

fifty (\$50.00) dollars. The well permit applicant shall submit the required written application within five (5) business days of such emergency approval.

E. A written permit shall be obtained from the Department and renewed annually to operate or maintain a commercial or industrial well regardless of the intended usage of said well.

F. A written permit shall be obtained from the Department and renewed annually for wells constructed at residential premises where public water is available regardless of the intended usage of said supply.

G. A written permit shall be obtained from the Department and renewed annually to operate or maintain a quasi-public water supply.

H. A written permit shall be obtained from the Department and renewed annually to operate or maintain an agricultural well.

Commented [RB3]: Clearly refers to definition 3.05

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I. All renewable permits shall be valid for one year, and, may be renewed at the expiration thereof upon payment of the fees hereinafter set forth. Such permits may be revoked by the Department upon the violation by the holder of any terms of the permit or these Rules and Regulations or in any emergency when, in the judgment of the Department, the continued operation of the well, for any reason, shall constitute a health hazard. The holder of such permit, after such revocation, shall have the right of appeal.

4.03 -- Fees Required

A. All applications requesting a permit to construct any well or soil boring shall require a processing fee of twenty-five (\$25.00) dollars be paid to the Department when such applications are submitted. The processing fee is not refundable, regardless of the status of approval.

B. The yearly permit to operate or maintain any water well, other than a domestic well, shall not be issued until an inspection fee of one hundred (\$100.00) dollars per well is paid each year to the Department.

C. An inspection fee of one hundred (\$100.00) dollars per site shall be paid to the Department for wells constructed for the primary purpose of monitoring, observation, testing, recovery, and/or any other usage which does not require the permanent installation of a pump within the well casing.

D. Dewatering or drainage wells require an inspection fee of one hundred (\$100.00) dollars per site.

E. Owners of domestic wells shall not be liable for an annual inspection fee, except when public water becomes available to a residential premise, then the well being used at said premise shall be subject to applicable fees being paid.

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F. Any new water wells constructed within the calendar year shall be subject to the inspection fee being paid at the time the well construction permit is issued. This fee will be prorated on a quarterly basis.

G. Any construction permits issued on an emergency basis require an additional processing fee of fifty (\$50.00) dollars be paid to the Department.

H. All inspection fees are due upon notification by the Department and are delinquent thirty (30) days after said notification.

I. An annual fee of twenty (\$20.00) dollars per well, up to a maximum fee of one hundred (\$100.00) dollars per mandated remediation site, shall be assessed for all active monitoring, vent, air sparging and recovery wells, or any other type well related to the remediation of groundwater at a site located within Shelby County. Also, a report, which is certified by the property owner or his authorized representatives that will indicate the number of wells at a site and their compliance with Section 6 of these regulations will be submitted on an annual basis for each site. Such reports are due June 30th of each year.

4.04 -- Well Driller

A. All water production wells to be constructed in Shelby County shall be constructed only by persons having a valid license as a water well driller under the TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION, DIVISION OF WATER RESOURCES.

B. A well driller shall have in his possession a valid well construction permit before any construction is to begin.

C. The well driller to whom a well construction permit is issued is responsible for the construction of the well in accordance with the permit and applicable laws and regulations.

D. It shall be the well driller's duty to inform persons requesting the services of his company, to construct, repair, alter, modify, or to perform any other service related to a well of the requirements of these Rules and Regulations.

E. The well driller shall be held liable for any type of well work initiated prior to the Department issuing a written permit.

F. It shall be the duty of the well driller to notify the Department when construction or modification on a well is to begin and when the work is completed so that proper inspections can be made during and after construction, and for the purpose of collecting samples from water wells.

G. The well driller shall notify the Department when repair work, as directed within these Rules and Regulations, is done on a well.

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H. Within thirty (30) days after a well has been constructed or modified, the well driller shall submit a report of construction (well log) to the Department on such forms as are prescribed or which may be furnished by the Department.

I. The well driller shall notify the Department prior to beginning abandonment procedures on a well.

SECTION 5- - WELL CONSTRUCTION STANDARDS FOR WATER WELLS

5.01 --General

A. All wells shall be constructed in a manner that will guard against waste and contamination of the groundwater aquifers underlying Shelby County. No person shall construct, repair, modify, or abandon or cause to be constructed, repaired, modified, or abandoned any well contrary to the provisions of these Rules and Regulations.

5.02 --Siting Criteria

A. A proposed well location shall satisfy the following minimum horizontal separation distance requirements:

1. Fifty (50) feet from a property line, to allow access to the well without encroaching on adjoining properties; to provide adequate distance from field lines and other sources of contamination that may exist or may be planned on adjacent properties; and, to reduce the potential for interfering with other wells drilled on other properties.
2. Twenty-five (25) feet from a road or dedicated right-of-way or easement.
3. Fifteen (15) feet from a building foundation for the purpose of protecting the well from a foundation of soil treated to control pests, insects, or vermin.
4. One hundred (100) feet from any subsurface sewage disposal system such as a septic tank and/or field lines.
5. One hundred (100) feet from any identifiable sources of contamination such as but not limited to disposal fields, seepage pits, manure piles, barns, underground fuel tanks, petroleum or other chemical pipeline, etc.
6. Fifty (50) feet from any storm drain or sanitary sewer that flows by gravity.
7. One hundred (100) feet from any sewage force main.
8. Fifty (50) feet from any drainage canal, ditch, stream, lake, or similar body of water.

9. Fifteen (15) feet from power lines and underground cables for electrical power.

10. Twenty-five (25) feet from natural gas lines.

11. Twenty-five (25) feet from any water main as defined by the utility owner.

B. The well site shall not be subject to flooding and shall be at least two (2) feet above the 100-year recurrence flood level for the area as determined from the latest available FEMA Flood Insurance Rate Map as being within a zone classified as A, A-99, AE, A1-A30, AH or AO. If necessary, the area shall be filled with material approved by the Department, properly graded and maintained to prevent the accumulation or retention of surface water.

C. Lots requiring a well for a potable water supply and a septic tank system for sewage disposal shall be a minimum of four (4) acres in size.

D. All parcels of land requiring a well for a source of potable water shall be self-supporting. A water line shall not cross property boundaries for the purpose of providing potable water to a premise.

E. A water production well cannot be sited or placed in service within a half-mile of the designated boundaries of a mandated or voluntary remediation site involving groundwater contamination or potential contamination, unless the applicant can make a demonstration that the well will not enhance the movement of contaminated groundwater or materials in or into the aquifer. Existence of contamination or potential contamination is to be determined by reviewing information provided in the application and additional information available to the Department.

5.03 --Sanitary Protection of Wells

A. All water used in the construction of a well shall be from an approved potable water supply. Water obtained from lakes, ponds, streams, and other such surface water sources is not approved and shall not be used in the well construction process.

B. It shall be the responsibility of the well driller to protect the opening made in drilling the well against any foreign material or any other type of contamination from entering the opening.

C. In the event a well becomes contaminated or obstructed, the well driller shall take whatever measures necessary to clear the well of contamination or obstruction. Should he decide to abandon the well for any reason, the well shall be filled in a manner prescribed by Section 9 of these Rules and Regulations.

D. Whenever construction stops before the well is grouted and pumping equipment is installed, the open annular space shall be covered and the well casing capped. The cap shall be either threaded onto the casing secured by a friction type device which locks onto the casing, welded, or secured by such other device or method as may be approved by the

Department. It shall be the responsibility of the owner to maintain the integrity of the protective device placed on the well opening by the well driller.

E. A well shall be drilled to a size that will permit the outer casing to be surrounded by a water tight seal a minimum of two (2) inches thick. All wells shall be grouted as soon as possible but not later than twenty-four (24) hours after the well casing has been set in place and all drilling has been completed.

F. The well driller shall notify the Department at least one full business day in advance of grouting wells to provide the Department the opportunity to observe the procedure. Such a condition shall be specified on the well construction permit. The grout material shall consist of a mixture of neat Portland Class A Cement or quick setting cement in a ratio of not over seven (7) gallons of water per ninety-four (94) pound sack of cement, or a coarse grained high solids non drilling mud grade bentonite slurry, such as Baroid Benseal, American Colloid or equal. The bentonite slurry shall be mixed in accordance with the manufacturers recommendations. Bentonite alone is not an acceptable grouting material. The relative proportion by weight for each component shall meet the following requirements:

Portland Cement:	92%	Or	Portland Cement:	74%
Bentonite:	8%		Bentonite:	6%
			Sand:	20%

For each two (2) percent addition of bentonite an additional 1.3 gallons of water should be added to the slurry mixture. A maximum of two (2) percent by weight of calcium chloride may be added. Other grouting materials or methods or any special conditions for grouting a well may be made by the Department within the well construction permit. The use of bentonite drilling clay as a grouting material is prohibited, except as an additive to neat cement grout. Only bentonite grout approved by the National Sanitation Foundation (NSF) shall be approved by the Department as appropriate grouting material.

G. The method of grouting the annular space of a well shall be throughout the entire length of the casing from the bottom of the casing to the ground surface and shall be pressure grouted through a tremie pipe from the bottom to the top in one continuous operation in order to avoid gapping or dilution of grout material. The return at the top shall be of the same consistency as the material that is pumped into the tremie pipe. During the grouting procedure any proposed changes to the approved grouting material will not be allowed by the Department.

H. Upon completion, the well shall be treated with a sufficient dosage of chlorine so that a concentration of at least one hundred (100) parts per million (ppm) free chlorine shall be obtained in all parts of the well for a period of twenty-four (24) hours. The well is then to be pumped free of chlorine and a water sample collected for bacteriological analysis. The

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result shall be required to be negative for E. coli bacteria prior to putting the well into service.

5.04 --Construction Materials And Other Requirements

All materials, components, parts, etc., used in the installation of a water well or any other type of well, such as the casing, screen, pumping equipment, pressure tank, wiring, pipe, and any other such components, must comply with the standards as established in the RULES OF THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION, DIVISION OF WATER RESOURCES, CHAPTER 0400-45-09 (as Revised), entitled WATER WELL LICENSING REGULATIONS AND WELL CONSTRUCTION STANDARDS. When deemed necessary, the Department may require standards and specifications to be more stringent than those required by the State of Tennessee.

5.05 --Sanitary Protection Of The Well Pumping Facilities

A. A sanitary well seal that is water tight shall be provided at the terminal of any well casing in order to prevent any contamination from entering the well casing. The well casing shall terminate no less than six (6) inches above land surface.

B. If the well is to be vented, it shall be required to have an inverted screened vent.

C. The pump base foundation shall be reinforced, if the forces exerted are such that reinforcement is required, and shall be a minimum of two (2) inches larger than the base plate. The concrete used shall be of a strength suitable to withstand any vibrations, etc., to which it may be subjected.

D. All water wells shall be provided with a readily accessible faucet or tap on the well discharge line at the wellhead for the collection of water samples.

E. Where pitless adapters are used, they shall be required to meet National Sanitation Foundation (NSF) specifications for subsurface installations and shall bear the NSF seal.

F. The water tight casing or curbing of any well shall extend not less than six (6) inches above the established ground surface or twenty-four (24) inches above the maximum high water level where flooding occurs.

G. Any oil-lubricated pump installed in a well shall utilize oil or grease lubricants, which carry a NSF/ANSI 60 certification. The installer must supply the Department documentation to verify that the lubricant used has a NSF/ANSI 60 certification.

5.06 --Maintenance of Wells

A. Wells shall be maintained in an operative condition at all times in order for water samples to be collected for analytical purposes.

B. A source of power shall be made available to the well either by a permanent connection or by way of a temporary source such as a generator.

C. All wells shall be maintained in a condition whereby they are not a hazard to health or environment nor a source of potential contamination to the groundwater aquifers.

D. When a well is determined to be abandoned as defined by these Rules and Regulations, the owner shall be ordered to seal the well in accordance with the requirements of the Department.

5.07 --Disinfection of Wells

Every newly constructed well, modified well, or well that has been repaired shall be assumed to be contaminated by microorganisms. Before initiation of use, each well must be thoroughly and carefully cleaned and treated to ensure that all pathogenic organisms are eliminated. Care shall be exercised to make certain that all areas of a well come in full contact with a solution containing enough available chlorine to completely destroy all pathogenic microorganisms. An initial chlorine concentration of one hundred (100) parts per million (ppm) with a residual chlorine requirement of twenty-five (25) parts per million (ppm) after twenty-four (24) hours is considered adequate for this purpose. Domestic laundry bleaches containing sodium hypochlorite in either powder or tablet form may be used. The well shall be allowed to remain undisturbed after the treatment for a period of twenty-four (24) hours and then tested for residual chlorine of at least twenty-five (25) parts per million (ppm) must remain. After successful treatment all water remaining in the well and supply system shall be pumped free of residual chlorine and a sample of fresh water from the well shall be collected by and tested by the Department for bacteriological purity.

5.08 --Sampling of a Well

A. After a well has been drilled, modified, or repaired, a negative bacteriological sample shall be obtained prior to placing the well into service.

B. A well shall not be connected into a premise until a sample has been collected which produces negative bacteriological results.

C. If a sample collected from a newly constructed well is positive for *E. coli* bacteria, it shall be the well driller's responsibility to take whatever steps are necessary to properly disinfect the well. Two (2) consecutive bacteriological samples producing negative results must be obtained prior to placing the well into service.

D. Whenever a well is repaired or modified, it shall be the responsibility of the well driller to notify the Department upon completion of work to sample the well for bacteriological purity. It shall be the well driller's responsibility to properly disinfect the well upon completion.

SECTION 6 --MONITORING AND RECOVERY WELLS CONSTRUCTION STANDARDS

6.01 --General

- A. A construction permit is required for monitoring and recovery wells.
- B. All wells shall be constructed in a manner that will guard against contamination of the groundwater aquifers underlying Shelby County. No person shall construct, repair, modify, or abandon or cause to be constructed, repaired, modified, or abandoned any well contrary to the provisions of these Rules and Regulations.
- C. Within thirty (30) days after well construction the well driller or authorized contractor responsible for well installation shall submit a well driller's log for every well installed at a site. Any sample analysis results for a monitoring or recovery well shall be submitted with the logs of the well, or by separate mailing if received within 60 days after well construction.

6.02 --Siting Criteria

When a well site is subject to flooding it shall be cased to a point at least two (2) feet above the 100-year recurrence flood level for the area as determined from the latest available FEMA Flood Insurance Rate Map as being within a zone classified as A, A-99, AE, A1-A30, AH or AO. In the case of a flush mount, the well shall have a waterproof seal with a lockable leak-proof inner cap. If necessary, the area shall be filled with material approved by the Department, properly graded and maintained to prevent the accumulation or retention of surface water.

6.03 --Sanitary Protection of Wells

- A. All water used in the construction of a well shall be from an approved potable water supply. Water obtained from lakes, ponds, streams and other such surface water sources is not approved and shall not be used in the well construction process.
- B. It shall be the responsibility of the well driller to protect the opening made during the drilling and to prevent any type of contamination from entering.
- C. Should a well be abandoned for any reason, the well shall be filled in a manner prescribed by Section 9 of these Rules and Regulations.
- D. Whenever construction stops before the well is grouted the open annular space shall be covered and the casing capped. The casing cap shall be either threaded onto the casing, secured by a friction type device which locks onto the casing welded or secured by such other device or method as may be approved by the Department. It shall be the responsibility

of the owner to maintain the integrity of the protective device placed on the well opening by the well driller.

E. A well shall be drilled to a size that will permit the outer casing to be surrounded by a water tight seal, a minimum of two (2) inches thick. All wells shall be grouted as soon as possible but not later than twenty-four (24) hours after the well casing has been set in place and all drilling has been completed.

F. The well driller shall notify the Department at least one full business day in advance of grouting wells to provide the Department the opportunity to observe the procedure. Such a condition shall be specified on the well construction permit. The grout material shall consist of a mixture of neat Portland Class A Cement or quick setting cement and water in a ratio of seven (7) gallons of water per ninety-four (94) pound sack of cement, or a coarse grained high solids non drilling mud grade bentonite slurry, such as Baroid Benseal, American Colloid or equal. The bentonite slurry shall be mixed in accordance with the manufacturers recommendations. A Portland cement grout and bentonite combination is acceptable. The relative proportion by weight for each component of the cement grout bentonite combination shall meet the following requirements:

Portland Cement: 92%	Or	Portland Cement: 74%
Bentonite: 8%		Bentonite: 6%
		Sand: 20%

For each two (2) percent addition of bentonite an additional 1.3 gallons of water should be added to the slurry mixture. A maximum of two (2) percent by weight of calcium chloride may be added. Other grouting materials or methods or any special conditions for grouting a well may be made by the Department within the well construction permit. The use of bentonite drilling clay as a grouting material is prohibited, except as an additive to neat cement grout. Only bentonite grout approved by the National Sanitation Foundation (NSF) shall be approved by the Department as appropriate grouting material.

G. The method of grouting the annular space of a well shall be throughout the entire length of the casing in one continuous operation from the top of the screen or bentonite seal to the ground surface. The grout mixture may be pumped from the surface when:

1. water will not be encountered, and
2. the depth is less than twenty (20) feet.

Pressure grouting is required if the aforementioned conditions are not met. Pressure grouting will be accomplished using a tremie pipe. When the tremie pipe is encased in the grout, it must have the same protection as the casing. (refer to paragraph 6.03 D)

H. The borehole shall not hydraulically connect separate aquifers.

6.04 --Construction Materials And Other Requirements

A. All materials, components, parts, etc., used in the installation of a monitoring or recovery well, such as the casing, screen, pumping equipment, pressure tank, wiring, pipe and other such components, must comply with the standards as established in the RULES OF THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION, DIVISION OF WATER RESOURCES (Divisional Reorganization in 2012), CHAPTER 0400-45-09-.18, entitled MONITOR WELL CONSTRUCTION STANDARDS. When deemed necessary, the Department may require standards and specifications to be more stringent than those required by the State of Tennessee.

B. The well shall be backfilled to a point, a minimum of two (2) feet above the top of the screen with filter sand, followed by a minimum of two (2) feet bentonite pellet seal above, which shall be grouted in accordance with Section 6.03.

C. All piping materials shall be flush joint and threaded pipe. No solvent weld cements or other components shall be allowed. End points shall have threaded ends or be riveted on. Slip on ends are not allowed. Top caps shall be threaded or have some type of locking feature.

D. Bentonite pellets shall have a maximum size of one quarter (1/4) inch to prevent bridging and shall then be activated with potable water.

6.05 --Protection of the Well

A. When a well site is to be subject to flooding, it shall be cased to a point:

1. at least two (2) feet above the 100-year recurrence flood level for the area as determined from the latest available FEMA Flood Insurance Rate Map as being within a zone classified as A, A-99, AE, A1-A30, AH or AO, or,

2. In the case of flush mount, have a waterproof seal with a lockable leak-proof inner cap. When necessary the area shall be filled with material approved by the Department, properly graded and maintained to prevent the accumulation of retention of surface water.

B. Until the well is abandoned and closed in accordance with these regulations, that portion of the well above the ground level shall be protected against tampering or destruction.

6.06 --Maintenance of Wells

A. Wells shall be maintained in an operative condition at all times in order for water samples to be collected for analytical purposes and shall have at least one (1) keyed lock to prevent tampering. Because of the potential for surface runoff to enter the below grade protective structure and/or well, installation of a removable cover with a flexible O-ring or

gasket attached at the point where the cover fits over the protective structure and/or well will be necessary to prevent surface runoff from entering the well.

B. All wells shall be maintained in a condition whereby they are not a hazard to health or environment nor a source of contamination to the groundwater aquifers.

C. When a well is determined to be abandoned, as defined by these rules and regulations, the owner shall be ordered to seal the well in accordance with the requirements of Section 9 of these regulations.

SECTION 7 --SOIL BORINGS

7.01 --Regulations

A. Any soil boring of thirty (30) feet or less shall not require a permit or require professional supervision for the purposes of this ordinance.

B. All soil borings to a depth greater than thirty (30) feet but less than one hundred (100) feet shall require a permit and must be under the supervision of a licensed water well driller or an engineer or geologist licensed in the State of Tennessee. An application must be submitted to the Department prior to the permit being issued. A plot plan showing the proposed soil boring must also be submitted along with the application.

C. Modifications to the permit related to the number of borings and depth not to exceed one hundred (100) feet may be made at the discretion of the licensed well driller, engineer or geologist on the site. Details of these changes shall be included in the final report within thirty (30) days of job completion. Changes to the number or depth of borings that are more than one hundred (100) feet deep must receive prior approval from the Department.

D. Any soil boring that is converted to a monitoring well after being permitted as a soil boring, will be required to apply for a permit as a monitoring well.

7.02 --Closure of Boreholes

A. All shallow boreholes, up to thirty (30) feet, shall be filled with the material taken from the hole or like material.

B. For medium depth holes, thirty (30) feet to one hundred (100) feet, the log may be consulted before the method of filling is determined. For cases when the boring does not encounter water, fill shall be as noted in Section 7.02 A. above. When water is encountered, the boring shall be filled in accordance with Section 7.03 C. below, or with bentonite pellets, which will not dissolve for a minimum of thirty (30) minutes, to a depth of not less than two (2) feet above the upper stratum in which the water was encountered. Completion of the filling of the borehole shall be with the material from the boring as in 7.02 A. above. The placement of the bentonite shall depend upon the method of drilling and whether the hole stands open. When the hole is open above the water bearing material the bentonite

pellets may be dropped into the hole. When the hole does not stand open, it will be necessary to pressure grout from the top of the water bearing material as required in Section 7.03 C. below. In all cases, the driller shall ascertain that the bentonite pellets are in fact filling the hole from the bottom up to the required elevation. When the borings are made using a drilling fluid to keep the hole open the boring shall be filled as specified in 7.03 C. below.

C. For deep borings, greater than one hundred (100) feet, the borehole shall be sealed by pressure grouting through a tremie pipe from the bottom upward in one (1) continuous operation. The grouting materials shall be neat Portland Class A or quick setting cement in a ratio of not over seven (7) gallons of water per ninety-four (94) pounds of cement; or a coarse grained high solids non-drilling mud grade bentonite grout slurry, such as Baroid Benseal, American Colloid, or equal. The bentonite grout shall be mixed in accordance with the manufacturers recommendations. A Portland cement grout and bentonite combination is acceptable. The relative proportion of each component shall meet the following requirement:

Portland cement:	92%
Bentonite:	8%

Or

Portland cement:	74%
Bentonite:	6%
Sand:	20%

For each two (2) percent addition of bentonite an additional 1.3 gallons of water should be added to the slurry mixture. A maximum of two (2) percent by weight of calcium chloride may be added. The use of bentonite drilling clay as a grouting material is prohibited except as an additive to neat cement grout. Only bentonite grout approved by the National Sanitation Foundation (NSF) shall be approved by the Department as appropriate grouting material.

SECTION 8 --INSPECTIONS

A. During the construction, modification, repair, or abandonment of any well the Department may conduct such periodic inspections as it deems necessary to ensure conformity with applicable standards. Duly authorized representatives of the Department may, at reasonable times, enter upon and shall be given access to any premise for the purpose of such inspection.

B. When during construction, modification, repair, or abandonment of any well the Department finds the work is not being done in accordance with rules, regulations and standards as required, the Department shall give the owner and well driller written notice stating which rules, regulations or standards are being violated. At such time, the Department may order that necessary corrective action be taken within a reasonable time

to be prescribed in such order. Any such order shall become final unless the person or persons named therein requests, by written petition, a hearing before the Board no later than fourteen (14) days after the date such order is served. Failure to act in accordance with the order of the Department after receipt of written notice shall be grounds for revocation of the permit.

C. All private water supplies shall be subject to inspection by the Department and when necessary, said supplies deemed shall be made available for the collection of samples in order to determine the purity of the supply. When a water sample is found to have contamination the owner shall be required to take whatever steps necessary to correct the contamination problem.

D. All wells shall be subject to inspection by the Department and shall be made available for the collection of samples in order to determine the purity of the supply.

SECTION 9 --ABANDONMENT OF WELLS

9.01 --General Requirements

The objective of the requirements described in this Section is to restore as nearly as possible those subsurface conditions which existed before the well was constructed. A well penetrating several aquifers or formations must be filled and sealed in such a way as to prevent the vertical movement of water from one aquifer to another. The Department shall require that certain abandonment procedures be followed in order to avoid or reduce water quality and/or water quantity problems.

A. All abandoned wells shall be filled with Portland cement grout, a high solids bentonite grout, or a Portland cement grout and bentonite combination in such a way that they do not produce water or act as a conduit for the interchange of waters of undesirable quality with those whose quality is desirable, or present a hazard to the safety and well-being of people and/or animals.

B. The owner shall submit a plan to fill at the owner's expense any abandoned or condemned well within thirty (30) days after receipt of notice from the Department.

C. All abandoned wells shall be filled only by a person having a valid driller's license from the Tennessee Department of Environment and Conservation, or be an engineer or geologist licensed with the State of Tennessee.

D. Within thirty (30) days of filling an abandoned well, the driller, engineer or geologist responsible for the well abandonment shall submit to the Department a well abandonment report. The report must be completely filled out and signed by the authorized contractor responsible for well abandonment.

E. The Department may require any well owner to have an abandoned well sealed when the well is:

1. contaminated;
2. a potential source of contamination to the groundwater aquifers underlying Shelby County;
3. not maintained in an operative condition for the purpose of collecting samples.

F. Observation and monitoring wells being actively used for the investigation or management of groundwater by federal, state or local governmental agencies or research organizations may be classified as temporarily abandoned and shall be covered with a secure cap such that the cover is water tight and cannot be removed except with the aid of equipment or the use of tools.

G. All wells for which a replacement well construction permit has been issued, must be abandoned as set forth in these regulations unless specific written approval for maintaining the replaced well is granted by the Department.

9.02 --Sealing And Fill Materials

A. Portland Class A cement grout, a high solids bentonite grout, or a Portland cement grout and bentonite combination are considered sealing material and may be used to fill an abandoned well.

B. The grouting materials shall be neat Portland Class A or quick setting cement in a ratio of not over seven (7) gallons of water per ninety-four (94) pounds of cement; or a coarse grained high solids non drilling mud grade bentonite slurry such as Baroid Benseal, American Colloid or equal. The bentonite grout shall be mixed in accordance with the manufacturers recommendations. Drilling mud grade bentonite alone is not an acceptable grouting material but a Portland cement grout and drilling mud grade bentonite combination is acceptable. The relative proportion for each component shall meet the following requirements:

Portland cement:	92%
Bentonite:	8%

Or

Portland cement:	74%
Bentonite:	6%
Sand:	20%

For each two (2) percent addition of bentonite an additional 1.3 gallons of water should be added to the slurry mixture. A maximum two (2) percent by weight of calcium chloride may be added. The use of bentonite drilling clay as a grouting material is prohibited except as an additive to neat cement grout. Only bentonite grout approved by the National

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Sanitation Foundation (NSF) shall be approved by the Department as appropriate grouting material.

C. Other grouting materials and methods may be used, if approved by the Department.

9.03 --Abandonment Procedures

A. Prior to filling the well, a plan shall be submitted within thirty (30) days containing a description of the general condition of the well. All available information about the construction of the well or information that any obstructions exist which would interfere with the filling and sealing process of the well shall be submitted with the application. Should any obstructions exist they shall, if practical as determined by the Department, be removed by cleaning out the hole or re-drilling.

B. All wells shall be filled with the required sealing or fill materials from the bottom of the well up, by methods that avoid separation or dilution of the seal material.

C. The grout shall be pumped into the well through a tremie pipe in one continuous operation.

D. The tremie pipe may be moved upward as the well is filled from the bottom up, if the pipe extends at least one (1) foot into the seal material.

E. Before abandonment procedures begin, an abandoned well shall have all pumping or plumbing equipment removed to assure freedom from obstructions that may interfere with the sealing operation.

F. The well shall be chlorinated prior to sealing by addition of sufficient quantities of liquid bleach or dry hypochlorite granules.

SECTION 10 --CROSS CONNECTION CONTROL

All groundwater in Shelby County is deemed potable and shall be protected against contamination by way of backflow through private water supplies.

A. All cross connection requirements for private water supplies, quasi-public water supplies, public water supplies, and all other potable water supplies shall fall within the guidelines of the Memphis and Shelby County Cross Connection Board, as established by City and County Resolution in October 1980, or as later modified.

SECTION 11 --LIMITATION ON USE OF WATER

A. Water pumped by any water well shall be limited to reasonable use.

B. The waste of groundwater from water wells by way of continual discharges or from any type of equipment, utilizing well water shall not be permitted.

1. Any person requesting a permit to construct a water well for use in an underground heat pump system; in retaining levels of lakes, ponds, or similar bodies of water; in commercial and industrial processes; irrigation; or in any other uses whereby a continual groundwater discharge may occur shall limit such discharges by taking conservation steps established by the Department. Failure to comply with this section shall result in the rejection of the permit application.

2. Any person having an existing well whereby a continual groundwater discharge occurs shall be required to take whatever conservation steps the Department may deem necessary to prevent such discharges. Failure to comply with this section is civil offense and upon conviction the violator shall be fined a minimum of twenty-five (\$25.00) dollars per day, up to a maximum of fifty (\$50.00) dollars per day, each day such violation of this section occurs constitutes a separate offense.

C. The Department shall take the steps it deems necessary to conserve groundwater obtained by way of private water supplies for cooling, refrigeration and air conditioning systems. At a minimum, the Department shall require the reuse of water for cooling through the use of cooling towers, evaporative condensers, or some other such device or method demonstrated by the applicant to be the best available control technology for such re-use in the application for which it is intended. The applicant is responsible for presenting and defending the technology selection. Preliminary meetings between the applicant and the Department are encouraged as a means of promoting efficiency in the review process

1. Except as provided in 4. below~~For Class A wells~~, there shall be an automatic appeal of the Department's approval of an application to the Board for Class A wells. Notice of a hearing on the appeal shall be required. This notice shall be published in a local newspaper of general circulation at least thirty (30) days prior to the hearing and include information providing the name of the applicant, the location of the well, where a copy of the application may be obtained and the time, date and location for the hearing;

a. The same notices shall be placed on the Shelby County website and the website of any jurisdiction in which the well is proposed.

b. Notice shall also be distributed electronically by email to a list of interested parties, such list to be maintained by the Department and shall include anyone who registers for such notification and provides and maintains a current email address for this purpose.

2. At such hearing, the Board may consider information provided by the applicant, the Department or any comment made by the general public about the proposed permit or use.

3. The Board may approve a Class A well permit on appeal only if it finds:

- a. The public water supplier for that area has notified the Department in writing that it is unable or unwilling to supply the amount of water required by the Applicant; and
- b. An evaluation of the available alternative supplies, signed by a Tennessee licensed professional engineer or geologist, determining that any alternative water supply is not suitable due to its chemical characteristics, insufficient quantity or that their use would be detrimental to an existing remediation site's groundwater remediation study or clean-up; and
- c. The proposed wells will not accelerate or enhance the migration of a known source of contamination into the aquifer.

4. Department approval of an application for a Class A well that is a replacement for an existing well is not subject to an automatic appeal provided that:

- a. The casing diameter of the replacement well is equal to or smaller than the existing well, and;
- b. The replacement well meets all other siting criteria and is no more than 500 feet from the original well, and;
- c. The application for the replacement well is submitted with an application to permanently fill and abandon the existing well.

D. All residential, commercial and industrial heat pump systems shall be a horizontal closed loop system with no discharge. The design of such heat pump systems shall be approved by the applicable code, and the owner shall have a valid mechanical permit.

E. Non-aqueous heat pump systems shall be prohibited.

SECTION 12 --AVAILABILITY OF PUBLIC WATER

12.01 --Public Water Available To A Premise

- A. Public water shall be deemed available to a premise other than a subdivision when it is located within three hundred (300) feet of said premise.
- B. When proposed subdivisions are comprised of premises used or intended for human habitation or other establishments where a water supply is or may be used for human consumption and where such subdivision is located within one quarter (1/4) mile of public water distribution facilities in existence in a dedicated right-of-way, the developer of such subdivision shall extend the water supply mains and connect all lots thereto.
- C. For industrial or commercial uses a public water supply source located within one thousand (1000) feet shall be used for all potable water needs.

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D. The distance between an existing water main in a dedicated right-of-way and a premise or proposed subdivision shall be measured by an actual or imaginary straight line upon the ground or in the air between the point within the premise or subdivision nearest to the existing water main in dedicated right-of-way and the point where the existing water main in a dedicated right of-way comes into closest proximity with the premise or proposed subdivision.

E. The connection to a public water supply shall be made in accordance with the requirements of all applicable rules and regulations of any county, state, or municipal agency having jurisdiction thereof.

F. The provisions of this section relate to single-family, multi-family, commercial and industrial-zoned lots and are applicable to new subdivisions, and existing subdivisions, which are unplatted or unrecorded.

G. The provisions of this section shall not apply when a utility cannot provide a public water distribution system due to the utility's franchise limitation or the inability or unwillingness of a city to extend its public water distribution system.

H. The construction of a well shall not be permitted at a premise where public water is available and which said water supply has a capacity to provide the quantity of water which the user has stated is necessary for purposes for which the water is intended to be used, unless otherwise provided by this code.

I. When a public water system (PWS) is available to a residential premise the potable water shall be obtained from the public water system. ~~A well may be approved by the Department for construction on a residential premise where public water is available under the following circumstances:~~

~~1. For filling a lake, providing such lake, pond or similar continuous body of water is not less than one (1) acre in size, with the total parcel of land being no less than four (4) acres in size.~~

~~2. For irrigation, provided such parcel of land is no less than four (4) acres in size.~~

~~3. For watering livestock, provided the parcel of land to be served is no less than four (4) acres in size.~~

J. A well ~~may~~ shall be approved by the Department for construction on a commercial and/or industrially zoned premise where public water is available, provided the owner demonstrates ~~to the Department that no reasonable alternative water supply to the proposed well exists~~ the well meets the requirements of a justifiable need and reasonable use. The potable water supply shall be obtained from the public water system.

K. ~~An Agricultural well shall be approved by the Department where the premise is zoned for agriculture and the parcel is no less than four (4) acres in size~~

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L. The Department shall approve an application for a well that is a replacement for an existing well provided that:

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- a. The casing diameter of the replacement well is equal to or smaller than the existing well, and;
- b. The replacement well meets all other siting criteria and is no more than 500 feet from the original well, and;
- c. The application for the replacement well is submitted with an application to permanently fill and abandon the existing well.

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~~K.M.~~ The construction of a water well or any other type of well regardless of use on a lot or premise less than four (4) acres in size utilizing a septic tank system for sewage disposal, shall not be permitted by the Department.

~~L.N.~~ Public water may be deemed not available to a residential premise if the topography and land surface features are such that they economically or structurally prevent connecting to public water.

SECTION 13 --INJECTION WELLS

No injection wells, other than septic systems (defined as domestic subsurface fluid distribution systems disposing exclusively of sanitary waste with the capacity of serving less than twenty (20) persons), shall be allowed in Shelby County. This includes injection of surface or groundwater, or chemically or thermally altered water, or any other fluids into the underground formations. All septic systems shall be approved by the Department and installed according to all applicable plumbing codes. No well shall be used for recharge, injection, or non-septic system disposal purposes.

SECTION 14 --VARIANCES AND APPEALS

14.01 --Existing Wells – Limited Variance from Rules and Regulations

Wells in existence on the effective date of this Rule shall be required to conform to the provisions of these Rules and Regulations, or any rules or regulations adopted pursuant thereto, where such provisions relate to assessment of fees, cross connection control, improperly maintained wells, abandoned wells, and wells constructed in such a way that create serious health hazards, and any other items deemed necessary by the Department.

14.02 --Appeals – Procedure

An aggrieved person shall, upon filing a written appeal of any order or ruling of the Department under these rules, be entitled to a hearing before the Board.

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A. The Board shall have and exercise the power, duty and responsibility to hear and decide all matters concerning an appeal to any rule or to any decision, ruling, or order of the Department. An appeal shall be made within fifteen (15) days of such decision, ruling, requirement, or order by filing a written notice of appeal directly to the Board specifying the grounds thereof and the relief requested. Such an appeal shall act as a stay of decision, ruling, requirement, or order in question until the Board has taken final action on the appeal, except when the Department has determined that a health hazard exists. The Board shall not less than thirty (30) days after the date of the receipt of the notice of appeal, set a date for the hearing and shall give notice thereof by certified mail to the interested parties. The Hearing date established above shall be no more than ninety (90) days after the date the written request for the appeal is received unless written consent of all parties is obtained.

B. Hearings before the Board shall be conducted under procedures established by the Board, from time to time, upon a majority vote of the members present. Such procedures shall not be in conflict with the requirements of the enabling ordinance. The Department shall make a copy of those adopted procedures for hearing an appeal available to any person, upon request, and they shall also be placed on the Shelby County website.

SECTION 15 --RULES AND REGULATIONS OF THE DEPARTMENT

The Board shall adopt and amend rules and regulations reasonably necessary to effectuate the policy and standards and intent declared by these Rules and Regulations, not inconsistent with these Rules and Regulations or with the Constitution or laws of the State of Tennessee.

SECTION 16 --CONSTITUTIONALITY OF ORDINANCE

If any part or parts of these Rules and Regulations shall be declared unconstitutional, it shall not affect the validity of any other part of these Rules and Regulations.

SECTION 17 --CONFLICT OF LAWS

All laws and parts of laws in conflict with the provisions of these Rules and Regulations shall be repealed upon adoption of these Rules and Regulations.

SECTION 18 --ENFORCEMENT AND PENALTIES

18.01 --Enforcement

A. If the Department determines that the holder of any permit issued pursuant to these Rules and Regulations has violated any provisions of the rules and regulations, or any rule or regulation adopted pursuant thereto, the Department may suspend or revoke any such permit. The Department may place on probation a person whose permit has been suspended. The Department may reprimand a permittee for a violation of the Rules and Regulations.

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B. The Department may petition a court of competent jurisdiction for injunctions or other appropriate relief to enforce the provisions of the Rules and Regulations. The attorney of the appropriate jurisdiction shall represent the Department when requested to do so.

C. Any person who willfully violates any of the provisions of these Rules and Regulations is guilty of a civil offense.

18.02 --Penalties

The well driller or any other person who fails to comply with the Rules and Regulations or the rules and regulations promulgated hereunder, shall be guilty of a civil offense and upon conviction be fined a minimum of twenty-five dollars (\$25.00) per day to a maximum of fifty dollars (\$50.00) per day, and each day of such violation of the Rules and Regulations occur shall constitute a separate offense.