

Notice of Rulemaking Hearing  
Department of Environment and Conservation  
Division of Water Supply

There will be a public rulemaking hearing before the Tennessee Department of Environment and Conservation, Division of Water Supply, acting on behalf of the Tennessee Water Quality Control Board to receive comments concerning amendments to Rule Chapter 1200-04-06 Underground Injection Control pursuant to Tennessee Code Annotated (TCA) 69-3-105 et seq. Tennessee Water Quality Control Act. A hearing will be held at the TDEC Fleming Training Center in Murfreesboro, Tennessee at 2022 Blanton Drive at 11 am CST on October 14, 2008 as well as at the large conference room of the TDEC Offices, 1625 Hollywood Drive in Jackson, Tennessee on October 15, 2008 at 11 am CST and at the conference room of the TDEC Offices, 3711 Middlebrook Pike in Knoxville, Tennessee at 11 am EST on October 16, 2008. Additional written comments must be received by the Division of Water Supply at the accompanying address by 4:30pm CST on October 24, 2008 in order to assure consideration:

Division of Water Supply  
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For a copy of the entire text of this notice of rulemaking hearing contact Scotty Sorrells, at Division of Water Supply, 401 Church Street, Nashville TN 37243-1549; (615) 532-0191 or call the nearest field office of the Department of Environment and Conservation, Division of Water Supply at 1-888-891-8332. The text of the rules may also be downloaded from the Department's website at <http://www.state.tn.us/environment/dws>.

Individuals with disabilities who wish to participate in these proceedings or to review these filings should contact the Tennessee Department of Environment and Conservation to discuss any auxiliary aids or services needed to facilitate such participation. Such contact may be made in person, by writing, telephone, or other means and should be made no less than ten days prior to the (scheduled meeting date) (or the date such party intends to review such filings), to allow time to provide such aid or service. Contact the Tennessee Department of Environment and Conservation, American Disabilities Act (ADA) Coordinator at 1-866-253-5827 (toll free) or 1-615-532-0200 (Nashville) for further information. Hearing impaired callers may use the Tennessee Relay Service (1-800-848-0298).

The proposed amendments were drafted for the Department to obtain primary enforcement authority from the Environmental Protection Agency for the Underground Injection Control Program based on federal requirements contained in 40 CFR 144, 145, 146, 147 and 148. In addition to the federal requirements, changes were made in Rule 1200-04-06-.02 Definitions for improved sinkhole, new injection well and the addition of a definition for recharge point and modified recharge point. Changes were made in Rule 1200-04-06-.03 Injection Prohibited to ban new injection wells within zone 1 of wellhead protection areas for public water wells and springs and to Rule 1200-04-06-.06 Classification of Injection Wells to add modified injection point in categories of class V (5) wells. Rule 1200-04-06-.09 General Standards and Methods was modified to require all injection wells to be identified on plat maps submitted with applications; to require owners and operators to receive mail and to keep the Division informed of their mailing address. Changes were also made in Rule 1200-04-06-.14 Class V Wells to address easements for class V wells not on the property of the applicant/responsible party and changes to plugging and abandonment requirements. Changes were made under Rule 1200-04-06-.16 Fees for Class II Injection Wells to reduce the fees for permit renewals and annual maintenance. Changes under Rule 1200-04-06-.18 Fees for Class V Injection Wells were made to add a modified recharge point application fee and a fee for change of ownership.

Substance of the Proposed Rules

Chapter 1200-04-06  
Underground Injection

Amendments

Rule 1200-04-06-.02 Definitions is amended by deleting it in its entirety and substituting the following so that, as amended, the Rule shall read as follows:

1200-04-06-.02 General

(1) Use of Number and Gender

As used in these Rules:

- (a) Words in the masculine gender also include the feminine and neuter genders; and
- (b) Words in the singular include the plural; and
- (c) Words in the plural include the singular.

(2) Rule Structure

These Rules are organized, numbered, and referenced according to the following outline form:

(1) paragraph

(a) subparagraph

1. part

(i) subpart

(l) item

l. subitem

A. section

(A) subsection

(3) Definitions

For the purposes of the Underground Injection Control program established in this chapter, the definition of any word or phrase used in these regulations shall be the same as given in T.C.A. 69-3-103 except the following words or phrases shall have the following meanings:

“Aquifer” means a formation, group of formations, or part of a formation that contains a sufficient quantity of permeable material to yield significant quantities of water for wells and springs.

“Area of Review” (AOR) means the area surrounding an injection well described according to the criteria set forth in Rule 1200-04-06-.09(3) or in the case of an area permit, the project area plus a circumscribing area the width of which is either a mile or a number calculated according to the criteria set forth in the formula for injection well AOR.

“Casing” means a tubular retaining structure which is installed in an excavated hole to maintain the well opening.

“Cementing” means the act of employing cementitious material in the annulus behind the well casing.

“Cesspool” means a drywell that receives untreated sanitary waste containing human excreta, and which sometimes has an open bottom and/or perforated sides.

“Commissioner” means the commissioner of environment and conservation or the commissioner’s duly authorized representative and, in the event of the commissioner’s absence or a vacancy in the office of commissioner, the deputy commissioner.

“Compatibility” means substances capable of being mixed or existing together.

“Composite sample” means a mixture of grab samples collected at the same sampling point at different times.

“Confining unit or zone” means a geological formation, group of formations, or part of a formation that limits fluid movement from an injection zone.

“Confining bed” means a layer of distinctly less permeable material stratigraphically adjacent to one or more aquifers.

“Contamination” means the addition of any substance or matter to water.

“Draft permit” means a document prepared under Rule 1200-04-06-.08(7) indicating the Commissioner’s tentative decision to issue or deny, modify, revoke and reissue, terminate, or reissue a “permit.” A notice of intent to terminate a permit, and a notice of intent to deny a permit, as discussed in Rule 1200-04-06-.08(9) “draft permits.”

“Drilling mud” means a heavy suspension used in drilling an “injection well,” introduced down the drill pipe and through the drill bit.

“Drywell” means a well, other than an improved sinkhole or subsurface fluid distribution system, completed above the water table so that its bottom and sides are typically dry except when receiving fluids.

“Enhanced recovery” means increased recovery from a pool achieved by artificial means or by the application of energy extrinsic to the pool.

“Emergency permit” means a UIC “permit” issued in accordance with Rule 1200-04-06-.07(8).

“Environmental Protection Agency” (“EPA”) means the United States Environmental Protection Agency.

“EPA” means the United States “Environmental Protection Agency.”

“Exempted aquifer” means an “aquifer” or its portion that meets the criteria in the definition of “underground source of drinking water” but which has been exempted according to the procedures in Rule 1200-04-06-.04.

“Existing injection well” means an “injection well” that began injection of fluids into the subsurface prior to the effective date of this rule.

“Facility or activity” means any waste facility or activity (including land or appurtenance thereto) that is subject to regulation under the Tennessee Solid Waste Disposal Act, the Tennessee Hazardous Water Management Act, the Tennessee Water Quality Control Act or the Tennessee Safe Drinking Water Act.

“Fluids” means materials or substances that flow or move whether semi-solid, liquid, sludge, gas or any other form or state.

“Formation” means a body or stratum of rock characterized by a degree of lithologic homogeneity and is mappable on the earth’s surface or traceable in the subsurface.

“Formation fluid” means “fluid” present in a “formation” under natural conditions as opposed to fluids introduced into a formation by injection or emplacement by man. This term is synonymous with “native water.”

“Grab sample” means a sample collected at a particular time and place that represents the composition of the source at that time and place.

“Ground water” means water below the land surface and free to move under the influence of gravity.

“Grout” means a fluid mixture of cement and water or other cementitious material of a consistency that can be forced through a pipe under hydraulic pressure.

“Hazardous waste” means a hazardous waste as defined by rule 1200-1-11-.02(1)(c).

“Hydrofracture” means the application of pressure sufficient to cause rupture of a subsurface formation.

“Improved Sinkhole” means a naturally occurring karst depression modified by man in such a manner that the chemical, physical, biological, radiological, or bacteriological properties of the water or fluids moving into the subsurface through it have been or will be altered.

“Infiltration cell” means an unlined man-made structure designed for the distribution of fluids into or above a “USDW.”

“Injection well” means 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 the emplacement of fluids;
- (b) a subsurface fluid distribution system;
- (c) an improved sinkhole; or
- (d) infiltration cell and any other structures or devices designed, constructed or used to emplace fluids into the subsurface, except as provided in rule 1200-04-06-.03(3).
- (e) modified recharge point

“Injection zone” means the formation, group of formations, or part of a formation that receives fluids through an injection well.

“Injectivity index” means the rate of injection in gallons per minute per unit of applied injection pressure in pounds per square inch.

“Innovative technology” means an experimental or unproven procedure, which has not been demonstrated to be feasible under the conditions in which it is being tested.

“Lease” means real property upon which the right to extract oil and gas or other minerals has been granted under contract for a share of the value of the production or an annual rental for a specified period.

“Mechanical integrity” means mechanically complete, performs the function for which it was intended and is unimpaired.

“Modified recharge point” means a naturally occurring karst feature that has been modified by man with a structure or in any other manner that the chemical, physical, biological, radiological or bacteriological properties of the water or fluids moving into the subsurface through it or the ground water has been or will be altered.

“New injection well” means any well that begins injection of fluids into the subsurface after August 9, 1985.

“Owner or operator” means the owner or operator of any “facility or activity” subject to regulation under the UIC program.

“Packer” means a device placed in a well to produce a fluid-tight seal in a section of the well bore or the annulus between the well casing and the inner injection tubing.

“Permit” means an authorization, license, or equivalent control document issued by EPA or an approved State to implement the requirements of this rule. “Permit includes an area permit and an emergency permit. Permit does not include UIC authorization by rule, or any permit which has not yet been subject of final agency action, such as a “draft permit.”

“Person” means an individual, association, partnership, corporation, municipality, State, Federal, or Tribal Agency, or an agency or employee thereof.

“Plugging” means the act or process of stopping the flow of water, oil, or gas into or out of a formation through a bore hole or well penetrating that formation.

“Point of Injection” means the last accessible point where a sample may be collected prior to waste fluids being released into the subsurface environment through a Class V injection well.

“Pollution” means such alteration of the physical, chemical, biological, bacteriological, or radiological properties of waters of this State including but not limited to changes in temperature, taste, color, turbidity, or odor of the waters:

- (a) as will result or will likely result in harm, potential harm or detriment of the public health, safety, or welfare;
- (b) as will result or will likely result in harm, potential harm or detriment to the health of animals, birds, fish, or aquatic life;
- (c) as will render or will likely render the waters substantially less useful to domestic, municipal, industrial, agricultural, recreational, or other reasonable uses; or
- (d) as will leave or will likely leave the waters in such condition as to violate any standards of water quality established by Water Quality Control Board.

“Project” means a group of wells in a single operation.

“Produced water” means those waters produced in conjunction with the production of crude oil or natural gas and commonly collected at field storage or disposal facilities including: lease tanks, commingled tank batteries, burn pits, and community or lease wastewater disposal systems.

“Public water system” means a system for the provision of piped water for human consumption if such system has at least fifteen (15) connections or regularly serves at least twenty-five (25) individuals at least sixty (60) days out of the year.

“Radioactive material” means any material, solid, liquid, or gas, which emits radiation spontaneously.

“Radioactive waste” means any waste fluid which contains radioactive material in concentrations which exceed those listed in chapter 1200-2-5, Schedule RHS 8-1, Table II, Column 2.

“Recharge point” means a naturally occurring sinkhole or other karst feature that accepts stormwater runoff from unimproved properties.

“Regional rock deformation” means folded, faulted, sheared, compressed or extended rocks which result from various earth forces.

“Sanitary waste” means liquid or solid wastes originating solely from humans and human activities, such as wastes from toilets, showers, wash basins, cleaning, clothes washing, or food preparation, together with any waters mixed with or used to convey such wastes, and provided that the waste or water is not mixed with industrial waste.

“Schedule of compliance” means a schedule of remedial measures included in a “permit,” including an enforceable sequence of interim requirements (for example: actions, operations, or milestone events) leading to compliance with the “appropriate Act and regulations.”

“Septic system” means a “well” that is used to emplace sanitary waste below the surface and is typically comprised of a septic tank and subsurface fluid distribution system or disposal system.

“Sewage” means water-carried waste or discharges from human beings or animals, from residences, public or private buildings, or industrial establishments, or boats, together with such other wastes and ground, surface, storm, or other water as may be present; (T.C.A. § 69-3-103(27)).

“Sinkhole” means a naturally occurring closed depression in a karst area characterized by inward drainage (inlets) accepting runoff from the surrounding area and having no visible surface outlet.

“Site” means the land or water area where any facility or activity is physically located or conducted including adjacent land used in connection with the facility or activity.

“Stratum” (plural strata) means a single sedimentary bed or layer, regardless of thickness, that consists of generally the same kind of rock material.

“Subsurface fluid distribution system” (SFDS) means an assemblage of perforated pipes, drain tiles, or mechanisms intended to distribute fluids below the surface of the ground.

“Total Dissolved Solids” means a material that passes through a standard glass fiber filter disk and remains after evaporation and drying to constant weight at 180°C.

“Transferee” means the owner or operator receiving ownership and/or operational control of the well.

”Transferor” means the owner or operator transferring ownership and/or operational control of the well.

“Tremie pipe” means a device, usually small diameter pipe, that carries grouting materials to the bottom of a drill hole and allows the emplacement of the grout from the bottom up without the introduction of appreciable air pockets.

“UIC” means the Underground Injection Control program.

“Underground injection” means a “well injection.”

“Underground source of drinking water” (USDW) means an aquifer or its part that:

- (a) currently supplies any public water system; or
- (b) contains a sufficient quantity of ground water to supply a public water system; and
  - 1. currently supplies drinking water for human consumption; or
  - 2. contains fewer than 10,000 mg/L total dissolved solids; and
- (c) which is not a portion of an aquifer which has been designated by the Department as an Exempted Aquifer.

“Well” means a bored, drilled, driven or dug shaft or hole whose depth is greater than the largest surface dimension.

“Well injection” means the subsurface emplacement of fluids through a “well.”

“Zone of endangering influence” means the portion of an injection zone that appears to lie in the path of a waste plume from an injection well or well field. A zone of endangerment has both a horizontal and vertical extent.

Authority: T.C.A. §§ 69-3-105 and 4—5—202.

Paragraph (2) of Rule 1200-04-06-.03 Injection Prohibited is amended by adding the phrase “or hazardous” after the word “radioactive” such that as amended the paragraph shall read:

- (2) Wells may not be used for the disposal of radioactive or hazardous waste.

Subparagraph (a) of paragraph (3) of Rule 1200-04-06-.03 Injection Prohibited is amended by adding the phrase “with the capacity of” after the word “waste” such that as amended the subparagraph shall read:

- (a) Operation of domestic subsurface distribution systems disposing of exclusively sanitary waste with the capacity of serving less than 20 persons;

Rule 1200-04-06-.03 Injection Prohibited is further amended with the addition of paragraph (6) such that as amended the paragraph shall read:

- (6) After the effective date of this rule all classes of new injection wells located within Zone 1 of a community water system’s wellhead protection area as defined in Rule 1200-5-1-.34 under T.C.A. 68-13-701 et seq., the Tennessee Safe Drinking Water Act.

Authority: T.C.A. §§ 69-3-105 and 4—5—202.

Rule 1200-04-06-.04 Prevention of Pollution of Ground Water is amended by adding the phrase “and Identification of Underground Sources of Drinking Water with Exempted Aquifers” at the end of the title such that as amended the Rule shall read:

Rule 1200-04-06-.04 Prevention of Pollution of Ground Water and Identification of Underground Sources of Drinking Water with Exempted Aquifers.

Rule 1200-04-06-.04 Prevention of Pollution of Ground Water and Identification of Underground Sources of Drinking Water with Exempted Aquifers is amended by deleting it in its entirety and replacing it with the following such that as amended the Rule shall read:

- (1) No owner or operator shall construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation or may otherwise adversely affect the health of persons. The applicant for the permit shall have the burden of showing that the requirements of this paragraph are met.
- (2) For Class I, II and III wells, if any water quality monitoring of an underground source of drinking water indicates the movement of any contaminant into the underground source of drinking water, except as authorized under this Rule, the commissioner shall prescribe such additional requirements for construction, corrective action, operation, monitoring, or reporting (including closure of the injection well) as are necessary to prevent such movement. In the case of wells authorized by permit, these additional requirements shall be imposed by modifying the permit in accordance with Rule 1200-04-06-.08(8) or the permit may be terminated under Rule 1200-04-06-.08(13) if cause exists, or appropriate enforcement action may be taken if the permit has been violated.
- (3) For class V wells, if at any time the commissioner learns that a Class V well may cause a violation of primary drinking water regulations the owner or operator shall:
  - (a) Require the injector to obtain an individual permit;
  - (b) Order the injector to take such actions (including, where required, closure of the injection well) as may be necessary to prevent the violation. For EPA administered programs, such orders shall be issued in accordance with the appropriate provisions of the Safe Drinking Water Act (SDWA); or
  - (c) Take enforcement action.
- (4) Whenever the commissioner learns that a Class V well may be otherwise adversely affecting the health of persons, he or she may prescribe such actions as may be necessary to prevent the adverse effect, including any action authorized under paragraph (3) of this Rule.
- (5) Notwithstanding any other provision of this rule, the commissioner may take emergency action upon receipt of information that a contaminant which is present in or likely to enter a public water system or underground source of drinking water may present an imminent and substantial endangerment to the health of persons. The commissioner must first determine that the appropriate State and local authorities have not taken appropriate action to protect the health of such persons, before taking emergency action.
- (6) Identification of Underground Sources of Drinking Water

- (a) The commissioner may identify (by narrative description, illustrations, maps, or other means) and shall protect, except where exempted under subparagraph (b) of this paragraph, as an underground source of drinking water, all aquifers or parts of aquifers which meet the definition of an "underground source of drinking water" in Rule 1200-04-06-.02. Even if an aquifer has not been specifically identified by the commissioner, it is an underground source of drinking water if it meets the definition in Rule 1200-04-06-.02.
- (b) 1. The commissioner may identify (by narrative description, illustrations, maps, or other means) and describe in geographic and/or geometric terms (such as vertical and lateral limits and gradient) which are clear and definite, all aquifers or parts thereof which the Commissioner proposes to designate as exempted aquifers using the criteria in paragraph (7) of this Rule.
2. No designation of an exempted aquifer submitted as part of a UIC Program shall be final until approved by the EPA Administrator as part of a UIC program.
3. Subsequent to program approval or promulgation, the commissioner may, after notice and opportunity for a public hearing, identify additional exempted aquifers. For approved State programs exemption of aquifers identified:
- (i) Under paragraph (7) of this Rule shall be treated as a program revision when:
- (I) Either EPA or the approved State may initiate program revision. Program revision may be necessary when the controlling Federal or State statutory or regulatory authority is modified or supplemented. The state shall keep EPA fully informed of any proposed modifications to its basic statutory or regulatory authority, its forms, procedures, or priorities.
- (II) Revision of a State program shall be accomplished as follows:
- I. The State shall submit a modified program description, Attorney General's statement, Memorandum of Agreement, or such other documents as EPA determines to be necessary under the circumstances.
- II. Whenever EPA determines that the proposed program revision is substantial, EPA shall issue public notice and provide an opportunity to comment for a period of at least 30 days.
- The public notice shall be mailed to interested persons and shall be published in the Federal Register and in enough of the largest newspapers in the State to provide Statewide coverage. The public notice shall summarize the proposed revisions and provide for the opportunity to request a public hearing. Such a hearing will be held if significant public interest based on requests received.
- III. The Administrator shall approve or disapprove program revisions based on the requirements of this part and of the Safe Drinking Water Act.

IV. A program revision shall become effective upon the approval of the Administrator. Notice of approval of any substantial revision shall be published in the Federal Register. Notice of approval of non-substantial program revisions may be given by a letter from the Administrator to the State Governor or his designee.

(ii) Paragraph (7) of this Rule shall become final if the Commissioner submits the exemption in writing to the EPA Administrator and the EPA Administrator has not disapproved the designation within 45 days. Any disapproval by the EPA Administrator shall state the reasons and shall constitute final Agency action for purposes of judicial review.

(c) 1. For Class III wells, the Commissioner shall require an applicant for a permit which necessitates an aquifer exemption under part (7)(b)1 of this Rule to furnish the data necessary to demonstrate that the aquifer is expected to be mineral or hydrocarbon producing. Information contained in the mining plan for the proposed project, such as a map and general description of the mining zone, general information on the mineralogy and geochemistry of the mining zone, analysis of the amenability of the mining zone to the proposed mining method, and a time-table of planned development of the mining zone shall be considered by the Commissioner in addition to the information required.

2. For Class II wells, a demonstration of commercial producibility shall be made as follows:

(i) For a Class II well to be used for enhanced oil recovery processes in a field or project containing aquifers from which hydrocarbons were previously produced, commercial producibility shall be presumed by the Commissioner upon a demonstration by the applicant of historical production having occurred in the project area or field.

(ii) For Class II wells not located in a field or project containing aquifers from which hydrocarbons were previously produced, information such as logs, core data, formation description, formation depth, formation thickness and formation parameters such as permeability and porosity shall be considered by the Commissioner, to the extent such information is available

#### (7) Exempted Aquifers

An aquifer or a portion thereof which meets the criteria for an "underground source of drinking water" may be determined to be an "exempted aquifer" if it meets the following criteria:

(a) It does not currently serve as a source of drinking water; and

(b) It cannot now and will not in the future serve as a source of drinking water because:

1. It is mineral, hydrocarbon or geothermal energy producing, or can be demonstrated by a permit applicant as part of a permit application for a Class II or III operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible.

2. It is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical;

3. It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or
4. It is located over a Class III well mining area subject to subsidence or catastrophic collapse;

or

- (c) The total dissolved solids content of the ground water is more than 3,000 and less than 10,000 mg/l and it is not reasonably expected to supply a public water system.

Authority: T.C.A. §§ 69-3-105 and 4—5—202.

Paragraph (1) of Rule 1200-04-06-.06 Classification of Injection Wells is amended by adding subparagraph (c) such that as amended the subparagraph shall read:

- (c) Radioactive waste disposal wells which inject fluids below the lowermost formation containing an underground source of drinking water within one mile of the well bore.

Paragraph (4) of Rule 1200-04-06-.06 Classification of Injection Wells is amended by adding subparagraph (c) such that as amended the subparagraph shall read:

- (c) Wells used by generators of hazardous waste or owners of operators of hazardous waste management facilities to dispose of hazardous waste, which cannot be classified under subparagraph (1)(a) or (4)(a) and (b) of this rule.

Subparagraph (g) of paragraph (5) of Rule 1200-04-06-.06 Classification of Injection Wells is amended by adding the sentence “This does not allow the injection of hazardous waste into a Class V well” after the first sentence such that as amended the subparagraph shall read:

- (g) Injection systems associated with remedial activity. This does not allow the injection of hazardous waste into a Class V well. Systems used to inject contaminated ground water that has been treated and is being reinjected into the same formation from which it was drawn are not prohibited by this rule if such injection is approved by state or federal agencies operating under the Tennessee Hazardous Waste Management Act, Part 1 or Part 2, T.C.A. Sections 68-212-101 et seq. or 68-212-201 et seq. or Tennessee Petroleum Underground Storage Tank Act, T.C.A. Sections 68-215-101 et seq. or Tennessee Water Quality Control Act, T.C.A. Sections 69-3-101 et seq. or Resource Conservation and Recovery Act (RCRA); 42 USC 6901-6992k or Comprehensive Environmental Response and Liability Act of 1980; 42 USC 9601-9675;

Paragraph (5) of Rule 1200-04-06-.06 Classification of Injection Wells is amended with the addition of subparagraphs (p), (q) and (r) such that as amended the subparagraphs shall read:

- (p) Dry wells used for the injection of wastes into a subsurface formation.
- (q) Modification of a recharge point or the area where the recharge originates.
- (r) Improved sinkholes

Authority: T.C.A. §§ 69-3-105 and 4—5—202.

Rule 1200-04-06-.07 Permit Required is amended with the addition of paragraph (8) such that as amended the paragraph shall read:

(8) Emergency permits.

(a) Coverage. Notwithstanding any other provision of this Rule or T.C.A. § 4-5-201 et seq. the commissioner may temporarily permit a specific underground injection if:

1. An imminent and substantial endangerment to the health of persons will result unless a temporary emergency permit is granted; or
2. A substantial and irretrievable loss of oil or gas resources will occur unless a temporary emergency permit is granted to a Class II well; and
  - (i) Timely application for a permit could not be practically made; and
  - (ii) The injection will not result in the movement of fluids into underground sources of drinking water; or
3. A substantial delay in production of oil or gas resources will occur unless a temporary emergency permit is granted to a new Class II well and the temporary authorization will not result in the movement of fluids into an underground source of drinking water.

(b) Requirements for issuance.

1. Any temporary permit under part (a)1 of this paragraph shall be for no longer term than required to prevent the hazard.
2. Any temporary permit under part (a)2 of this paragraph shall be for no longer than 90 days, except that if a permit application has been submitted prior to the expiration of the 90-day period, the commissioner may extend the temporary permit until final action on the application.
3. Any temporary permit under part (a)3 of this paragraph shall be issued only after a complete permit application has been submitted and shall be effective until final action on the application.
4. Notice of any temporary permit under this paragraph shall be published in accordance with T.C.A. § 4-5-201 et seq. within ten days of the issuance of the permit.
5. The temporary permit under this paragraph may be either oral or written. If oral, it must be followed within 5 calendar days by a written temporary emergency permit.
6. The commissioner shall condition the permit in any manner he or she determines is necessary to ensure that the injection will not result in the movement of fluids into an underground source of drinking water.

Authority: T.C.A. §§ 69-3-105 and 4—5—202.

Subparagraph (c) of paragraph (1) of Rule 1200-04-06-.08 Authorization by Permit for Injection Wells not Authorized by Rule is amended by deleting the acronym “SIC” and replacing it with “North American Industry Classification System (NAICS)” such that as amended the subparagraph shall read:

(c) Up to four North American Industry Classification System (NAICS) codes which best reflect the principal products or services provided by the facility.

Subparagraph (c) of paragraph (5) of Rule 1200-04-06-.08 Authorization by Permit for Injection Wells not Authorized by Rule is amended by deleting the word “properly” and replacing it with the word “property” such that as amended the subparagraph shall read:

- (c) The issuance of a permit does not authorize any injury to persons or property or invasion of other property rights, or any infringement of other State, Federal or local laws or regulations. In particular, the issuance of a permit does not relieve a Class I, Class IV or Class V permittee from any applicable requirement he may be subject to under the Tennessee Hazardous Waste Management Act (T.C.A. 6-46-101 et seq.).

Paragraph (6) of Rule 1200-04-06-.08 Authorization by Permit for Injection Wells not Authorized by Rule is amended by deleting the word “only” and inserting the phrase “as a minor modification” at the end of the paragraph such that as amended the paragraph shall read:

- (6) Transfer of permits – A permit may be transferred by the permittee to a new owner or operator if the permit has been modified or revoked and reissued as a minor modification.

Subparagraph (b) of paragraph (9) of Rule 1200-04-06-.08 Authorization by Permit for Injection Wells not Authorized by Rule is amended by adding the phrase “or terminate” at the end of the first sentence and the phrase “or notice of intent to terminate” after the word “revoke” in the second sentence such that as amended the subparagraph shall read:

- (b) Notice of intent to revoke or terminate. If the Department tentatively decides to revoke a permit, a notice of intent to revoke or notice of intent to terminate shall be issued.

Paragraph (10) of Rule 1200-04-06-.08 Authorization by Permit for Injection Wells not Authorized by Rule is amended with the addition of subparagraph (g) such that as amended the subparagraph shall read:

- (g) Allow for a change in ownership or operational control of a facility where the commissioner determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the commissioner.

Paragraph (13) of Rule 1200-04-06-.08 Authorization by Permit for Injection Wells not Authorized by Rule is amended by deleting the phrase “the effects of interaction with the host rock” in the second sentence such that as amended the paragraph shall read:

- (13) Permit Requirements—All UIC permits shall contain permit conditions established by the Commissioner as necessary to fulfill the purposes of the Tennessee Water Quality Control Act, T.C.A. §§69—3—101 et seq., a description of the injection zone being permitted, and any necessary corrective action as stated under rule 1200—4—6—.09(5). The permit conditions shall be set at levels to prevent adverse effects to persons utilizing the ground water resource after consideration of at least the following factors: any guidelines set for certain pollutants by U.S.E.P.A., the flow characteristics of ground water, risk to humans and the risk of migration. The following conditions (a) through (n) apply to all UIC permits. All conditions applicable to all permits shall be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to these regulations must be given in the permit.

Authority: T.C.A. §§69-3-105 and 4—5—202.

Paragraph (3) of Rule 1200-04-06-.09 General Standards and Methods is amended by deleting the phrase “Horizontal extent of endangering influence” such that as amended the paragraph shall read:

- (3) Area of Review

Subparagraph (a) of paragraph (3) of Rule 1200-04-06-.09 General Standards and Methods is amended by deleting it in its entirety and replacing with the following such that as amended the subparagraph shall read (actual changes shown in redline form):

(a) Descriptions of the area of review are subject to approval by the Department according to either subparagraph (a) or (b) of this paragraph. The commissioner may solicit input from the owners and operators of injection wells within the State as to which method is most appropriate for each geographic area or field. In no event shall the boundary of an area of review be less than a radius of one (1) mile from any injection well covered by the appropriate authorization. The following factors are to be included in the description:

1. Chemistry of the injection and formation fluids;
2. Hydrogeology, including the direction of ground water movement; and
3. Ground water use and dependence; past, present, and future, as documented by public record.

(i) Zone of endangering influence.

(I) The zone of endangering influence shall be:

- I. In the case of application(s) for well permit(s) under Rule 1200-04-06-.08, that area the radius of which is the lateral distance in which the pressures in the injection zone may cause the migration of the injection and/or formation fluid into an underground source of drinking water; or
- II. In the case of an application for an area permit, the project area plus an area the width of which is the lateral distance from the perimeter of the project area, in which pressures in the injection zone may cause the migration of the injection and/or formation fluid into an underground source of drinking water.

(II) Computation of the zone of endangering influence may be based upon the parameters listed below and should be calculated for an injection time period equal to the expected life of the injection well or pattern. The following modified Theis equation illustrates one form which the mathematical model may take.

$$r = \left( \frac{2.25kHt^{1/2}}{S^{10^x}} \right)$$

where:

$$X = \frac{4\pi kH(h_w - h_{po})XS G_p}{2.3Q}$$

r = Radius of endangering influence from injection well (length)

k = Hydraulic conductivity of the injection zone (length/time)

$H$  = Thickness of the injection zone (length)  
 $t$  = Time of injection (time)  
 $S$  = Storage coefficient (dimensionless)  
 $Q$  = Injection rate (volume/time)  
 $h_{bo}$  = Observed original hydrostatic head of injection zone (length) measured from the base of the lowermost underground source of drinking water  
 $h_w$  = Hydrostatic head of underground source of drinking water (length) measured from the base of the lowermost underground source of drinking water  
 $S G_p$  = Specific Gravity of fluid in the injection zone (dimensionless)  
 $\Pi$  (pi) = 3.142 (dimensionless)

The above equation is based on the following assumptions:

- I. The injection zone is homogeneous and isotropic;
- II. The injection zone has infinite areal extent;
- III. The injection well penetrates the entire thickness of the injection zone;
- IV. The well diameter is infinitesimal compared to “r”; and
- V. The emplacement of fluid into the injection zone creates and instantaneous increase in pressure.

(ii) Fixed radius.

- (I) In the case of application(s) for a well permit(s) a fixed radius around the well of not less than one mile may be used.
- (II) In the case of an application for an area permit a fixed width of not less than one mile for circumscribing the area may be used.

In determining the fixed radius, the following factors shall be taken into consideration: Chemistry of the injected and formation fluids; hydrogeology; population and ground-water use and dependence; and historical practices in the area.

Paragraph (5) of Rule 1200-04-06-.09 General Standards and Methods is amended by the addition of subparagraph (e) such that the subparagraph shall read:

- (e) Class III wells only. When setting corrective action requirements the commissioner shall consider the overall effect of the project on the hydraulic gradient in the potentially affected USDWs, and the corresponding changes in potentiometric surface(s) and flow direction(s) rather than the discrete effect of each well. If a decision is made that corrective action is not necessary based on the determinations above, the monitoring program required in Rule 1200-04-06-.12 shall be designed to verify the validity of such determinations.

Paragraph (6) of Rule 1200-04-06-.09 General Standards and Methods is amended by the addition of subparagraph (k) such that the subparagraph and its accompanying parts shall read:

- (k) After a cessation of operations of two years the owner or operator shall plug and abandon the well in accordance with the plan unless he:
  - 1. Provides notice to the commissioner; and
  - 2. Describes actions or procedures, satisfactory to the commissioner that the owner or operator will take to ensure that the well will not endanger USDWs during the period of temporary abandonment. These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the EPA Regional Administrator.

Rule 1200-04-06-.09 General Standards and Methods is further amended with the addition of paragraphs (11), (12) and (13) such that the paragraphs shall read:

- (11) The commissioner may require, by written notice on a selective well-by-well basis, an owner or operator of an injection well to establish and maintain records, make reports, conduct monitoring, and provide other information as is deemed necessary to determine whether the owner or operator has acted or is acting in compliance with T.C.A. § 69-3-105, Tennessee Water Quality Control Act or its implementing regulations.
- (12) All injection wells must be placed on a plat of the individual properties that the injection well is located on or the injection zone is beneath. The owner/operator of the injection well shall have contractual agreement for access to the injection well at all reasonable times.
- (13) All persons owning or operating an injection well shall keep the Department advised of their current address and must readily accept all mail sent to them by the Department. For the purposes of this Rule, registered or certified mail sent with proper postage to the registered owner or operator's last known address shall be considered adequate notification regardless of whether the mail is accepted or returned unclaimed.

Authority: T.C.A. §§ 69-3-105 and 4-5-202.

Subparagraph (a) of paragraph (1) of Rule 1200-04-06-.10 Class I Wells is amended by deleting the phrase "unless it can be demonstrated that the wastes become nonhazardous as a result of interaction with the host rock" such that as amended the subparagraph shall read:

- (a) Subsurface emplacement of fluids containing hazardous waste into ground water.

Subparagraph (c) of paragraph (2) of Rule 1200-04-06-.10 Class I Wells is amended by deleting it in its entirety.

Part 3 of subparagraph (a) of paragraph (4) of Rule 1200-04-06-.10 Class I Wells is amended by deleting the second sentence such that as amended the part shall read:

- 3. The compatibility of the injected fluid with both native fluid and the host rock of the intended injection zone must be demonstrated using laboratory or field data.

Authority: T.C.A. §§ 69-3-105 and 4-5-202.

The introductory text to Rule 1200-04-06-.11 Class II Wells is amended by deleting it in its entirety and substituting the following so that, as amended, the introductory text to the Rule shall read (actual changes shown in redline form):

1200-04-06-.11 Class II Wells. A permit must be obtained from the Department prior to the operation of any Class II injection well except for existing Class II enhanced recovery wells and hydrocarbon storage wells.

This requirement is in addition to and separate from any approval or regulatory procedure required by the Tennessee Oil and Gas Board, Department of Environment and Conservation.

Subparagraph (c) of paragraph (1) of Rule 1200-04-06-.11 Class II Wells is amended by deleting it and reserving it such that as amended the subparagraph shall read:

- (c) Reserved

Paragraph (11) of Rule 1200-04-06-.11 Class II Wells is amended by deleting it and replacing it with the following such that as amended the paragraph shall read (actual changes shown in redline form):

- (11) Existing Class II enhanced recovery wells and hydrocarbon storage wells.

Class II wells in current operation upon the effective date of this rule shall file an application within 6 months of the effective date of this rule. No application fee will be required. Failure to file an application by the required date shall make the wells in violation of Rule Chapter 1200-04-06 and subject to the new application fee or closure.

Paragraph (11) of Rule 1200-04-06-.11 Class II Wells is further amended with the addition of subparagraphs (a), (b), (c) and (d) such that the paragraphs shall read:

- (a) An existing Class II enhanced recovery or hydrocarbon storage injection well is authorized by rule, if the owner or operator injects into the existing well within one year after the date which the State of Tennessee's UIC program is authorized under the Federal Safe Drinking Water Act and becomes effective. An owner or operator of a well which is authorized by rule pursuant to this paragraph shall re-work, operate, maintain, convert, plug, abandon or inject into the well in compliance with applicable regulations.
- (b) Duration of well authorization by rule. Well authorization under this paragraph expires upon the effective date of a permit issued after plugging and abandonment in accordance with an approved plugging and abandonment plan pursuant to these Rules and upon submission of a plugging and abandonment report.
- (c) Prohibitions on injection. An owner or operator of a well authorized by rule pursuant to this paragraph is prohibited from injecting into the well:
  - 1. Upon the effective date of an applicable permit denial;
  - 2. Upon failure to submit a permit application in a timely manner;
  - 3. Upon failure to submit inventory information in a timely manner;
  - 4. Upon failure to comply with a request for information in a timely manner;
  - 5. Upon failure to provide alternative financial assurance;
  - 6. Forty-eight hours after receipt of the determination by the Commissioner that the well lacks mechanical integrity, unless the Commissioner requires immediate cessation; or
  - 7. Upon receipt of notification from the Commissioner that the transferee has not demonstrated financial responsibility.

- (d) Requirements. The owner or operator of a well authorized under this paragraph shall comply with the applicable requirements of this Rule. Such owner or operator shall comply with the casing and cementing requirements no later than 3 years and other requirements no later than 1 year after authorization.

Authority: T.C.A. §§ 69-3-105 and 4-5-202.

Rule 1200-04-06-.13 Class IV Wells is amended with the addition of paragraphs (3) and (4) such that the paragraphs shall read:

- (3) Wells used to inject contaminated ground water that has been treated and is being re-injected into the same formation from which it was drawn are not prohibited by this Rule if such injection is approved by EPA, or the State, pursuant to provisions for cleanup of releases under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), 42 U.S.C. 9601-9657, or pursuant to requirements and provisions under the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6901 – 6987.
- (4) Clarification. The following wells are not prohibited by this action:
  - (a) Wells used to inject hazardous waste into aquifers or portions thereof that have been exempted pursuant to Rule 1200-04-06-.04(7), if the exempted aquifer into which waste is injected underlies the lowermost formation containing a USDW. Such wells are Class I wells, and the owner or operator must comply with the requirements applicable to Class I wells.
  - (b) Wells used to inject hazardous waste where no USDW exists within one mile of the well bore in any underground formation, provided that the commissioner determines that such injection is into a formation sufficiently isolated to ensure that injected fluids do not migrate from the injection zone. Such wells are Class I wells and the owner or operator must comply with the requirements applicable to Class I wells.

Authority: T.C.A. §§ 69-3-105 and 4-5-202.

Paragraph (1) of Rule 1200-04-06-.14 Class V Wells is amended by the addition of subparagraph (e) such that the subparagraph shall read:

- (e) Motor Vehicle Waste Disposal Wells (MVWDWs) are prohibited and must be properly closed and abandoned.

Subparagraph (b) of paragraph (2) of Rule 1200-04-06-.14 Class V Wells is amended by adding the phrase “a list of all wells owned or operated along with the following information for each well to include” after the word “supply” such that as amended the subparagraph shall read:

- (b) The owner or operator shall within six (6) months after the promulgation of this rule supply a list of all wells owned or operated along with the following information for each well to include the following.

Paragraph (2) of Rule 1200-04-06-.14 Class V Wells is further amended by the addition of subparagraph (f) such that the subparagraph shall read:

- (f) Prohibition of injection. An owner or operator of a well which is authorized by rule pursuant to this paragraph is prohibited from injecting into the well:
  - 1. Upon the effective date of an applicable permit denial;

2. Upon failure to submit a permit application in a timely manner;
3. Upon failure to submit inventory information in a timely manner; or
4. Upon failure to comply with a request for information in a timely manner.

Paragraph (8) of Rule 1200-04-06-.14 Class V Injection Wells is amended by the addition of subparagraph (e) such that the subparagraph shall read:

- (e) The operator if not the property owner for all Class V injection wells shall have access to the "point of injection" for the Class V well. This is to be maintained by easement or deed restrictions on all injection points.

Paragraph (11) of Rule 1200-04-06-.14 Class V Wells is amended by the addition of subparagraph (e) such that the subparagraph shall read:

- (e) Closure does not mean that the owner/operator will need to cease operations at the facility, only that the owner or operator will need to close the well. A number of alternatives are available for the disposal of waste fluids. Examples of alternatives that may be available to motor vehicle stations include: recycling and reusing wastewater as much as possible; collecting and recycling petroleum-based fluids, coolants, and battery acids drained from vehicles; washing parts in a self-contained, recirculating solvent sink, with spent solvents being recovered and replaced by the supplier; using absorbents to clean up minor leaks and spills, and placing the used materials in approved waste containers and disposing of them properly; using a wet vacuum or mop to pick up accumulated rain or snow melt, and, if allowed, connecting floor drains to a municipal sewer or holding tank, and, if allowed, disposing of the holding tank contents through a publicly owned treatment works. The owner/operator should check with the publicly owned treatment works to see if they would accept the wastes. Alternatives that may be available to owners and operators of a large-capacity cesspool include: conversion to a septic system; connection to sewer; and installation of an on-site treatment unit.

Rule 1200-04-06-.14 Class V Wells is further amended with the addition of paragraph (12) such that the paragraph shall read:

(12) Prohibition of fluid movement.

(a) Injection activity prohibitions

1. No injection activity can allow the movement of fluid containing any contaminant into USDWs, if the presence of that contaminant may cause a violation of the primary drinking water standards, or other health based standards, or may otherwise adversely affect the health of persons. This prohibition applies to well construction, operation, maintenance, conversion, plugging, closure or any other injection activity.
2. If the Department learns that an injection activity may endanger USDWs, the Department may require the closure of the well, or require a permit, or require other actions.

(b) Closure requirements. The owner/operator must close the well in a manner that complies with the above prohibition of fluid movement. Also, the owner/operator must dispose or

otherwise manage any soil, gravel, sludge, liquids, or other materials removed from or adjacent to the well in accordance with all applicable Federal, State and local regulations and requirements.

Authority: T.C.A. §§ 69-3-105 and 4-5-202.

Paragraph (1) of Rule 1200-04-06-.16 Fees for Class II Injection Wells is amended by changing the permit renewal fee from \$1,500.00 to \$1,000.00 such that the paragraph shall read:

(1) Permit Application Fees. Applications for permits to operate a Class II injection well shall be accompanied by the following fees:

Application review fee.....\$2,500.00  
Permit renewal fee (every 5 years).....\$1,000.00

Paragraph (2) of Rule 1200-04-06-.16 Fees for Class II Injection Wells is amended by changing the annual maintenance fee from \$1,000 to \$500 such that the paragraph shall read:

(2) Operational Fees. Owners or operators of Class II injection wells shall pay the following fees to the Department:

Annual maintenance fee.....\$500  
Permit modification and reissuance fee.....\$ 250

Authority: T.C.A. §§69-3-105 and 4-5-202.

Paragraph (1) of Rule 1200-04-06-.18 Fees for Class V Injection Wells is amended with the addition of paragraphs (g) and (h) such that the paragraphs shall read:

(g) Change of ownership..... \$75  
(h) Modification of recharge point ..... \$350 (per project)

Authority: T.C.A. §§ 69-3-105 and 4-5-202.

The notice of rulemaking set out herein was properly filed in the Department of State on the 20th day of August, 2008. (FS 08-15-08; DBID 900)