The Texas Natural Resource Conservation Commission (commission) adopts amendments to §§331.9, 331.11, and 331.131-331.133, Underground Injection Control. Section 331.132 is adopted with changes to the proposed text as published in the January 28, 2000, issue of the *Texas Register* (25 TexReg 542). Sections 331.9, 331.11, 331.131, and 331.133 are adopted without changes and will not be republished.

BACKGROUND AND SUMMARY OF THE FACTUAL BASIS FOR THE ADOPTED RULES

Chapter 331, relating to Underground Injection Control, regulates all injection wells and activities related to injection wells regulated by the commission under Texas Water Code (TWC), Chapter 27. The adopted amendments to Subchapter A, General Provisions, clarify authorization by rule requirements related to Class V injection wells. The adopted amendments to Subchapter H, Standards for Class V Wells, update construction and closure standards and practices currently accepted as being more protective of groundwater. The adopted changes to Chapter 331 also ensure consistency with drilling standards associated with similar well types adopted by the Texas Department of Licensing and Regulation (TDLR), which regulates the conduct of licensed well drillers.

SECTION BY SECTION DISCUSSION

The adopted amendment to §331.9(a) adds a reference to closure standards for Class V injection wells authorized under this rule and states that the appropriate closure standards for Class V injection wells are located in §331.133.

The adopted amendment to §331.9(b)(2)(E) prohibits injection into Class V wells unless the construction standards in Subchapter H, and in the case of aquifer storage wells, both Subchapters H and K, are met.

The adopted new §331.11(a)(4)(B) clarifies that closed loop injection wells are contained within the Class V category. Under §331.11(a)(4), Class V wells are any injection well under the jurisdiction of the commission, that is not a Class I, III, or IV well. This section provides several examples of Class V wells, and was modified to include closed loop injection wells (a vertical closed water circulating loop capable of absorbing or rejecting heat as part of heat pump system), as a type of Class V well (as provided under 40 Code of Federal Regulations §144.3 and §144.6). Adding subparagraph (B) to §331.11(a)(4) to include close loop injection wells provides additional protection of groundwater resources because the commission can ensure that this type of well is constructed and closed in accordance with the standards in Subchapter H.

The commission is also adopting amendments to Subchapter H, §§331.131 - 331.133, relating to Standards for Class V Wells. The adopted amendment to §331.131, Applicability, replaces the agency name “Texas Water Commission” with “commission.” The adopted amendment also adds language that references Subchapter K, Additional Requirements for Class V Aquifer Storage Wells, to the applicable sections in Subchapter H. It also clarifies that aquifer storage wells must also comply with Subchapter K.

Several amendments to §331.132, relating to Construction Standards, were adopted to provide clarification for the regulated community and to update the commission’s standards to those consistent

with existing well drilling standards for water well drillers. With the transfer of the licensing and regulation of water well drillers and pump installers from the commission to the TDLR in 1997, some of the construction standards for Class V injection wells that were contained within the commission rules regulating drillers were inadvertently repealed by the commission when the rules governing the licensing of drillers were repealed as part of the transfer of the program. The construction standards adopted in §331.132 clarify that these construction standards for the design and closure of Class V injection wells are part of the commission's underground injection control program and not just a requirement for drillers.

The adopted amendments to §331.132(a) provide authorization to the executive director to approve alternative standards to those contained in §331.132 and also require all Class V wells to be installed by a driller licensed by the TDLR. As a result of this adopted amendment, all Class V wells will be installed by a licensed professional. The use of a licensed water well driller, who is trained and experienced in current well construction practices, will help ensure the proper construction of these wells and should ensure that the necessary level of groundwater protection is maintained once the well is put into operation.

The adopted amendments to §331.132(b) provide clarification for the regulated community on the reporting requirements related to the construction and operation of a Class V injection well. Except for closed loop injection and air conditioning return flow wells, new §331.132(b)(1) provides that prior to construction of the well, the owner/operator must submit all information required under §331.10(a) to the executive director. Except for closed loop injection wells and air conditioning return flow wells, adopted §331.132(b)(2) provides that after completion of construction, a report to the executive director

must be submitted on the state well report form, which is provided by the TDLR, within 30 days from the date the well construction is completed.

Adopted new §331.132(b)(3) addresses reporting requirements for closed loop injection wells and air conditioning return flow wells. The paragraph requires no reporting prior to construction and requires the submittal of the state well report form to the executive director within 30 days from the date the well construction is completed. Information on any additives, constituents, or fluids other than potable water that are used in the closed loop system must be reported in the water quality section of the state well report form. The subdivisions under subsection (b) have been redesignated in the adopted rule for improved organization and clarity.

Adopted new §331.132(c)(2) is added to address the sealing of the annular space and casing for injection wells and the filling of the top of the well bore for closed loop injection wells. Adopted amendments to §331.132(d) provide standards for surface completion for all types of wells. The proposed §331.132(d)(1)(C) which required below grade closed loop injection wells to follow the provisions in §331.132(c)(2) was removed for clarity. Adopted amendments to §331.132(d)(2) provide standards for completion at the top of the casing. Provisions related to the use of a pitless adaptor, which is a sanitary underground discharge assembly providing a watertight subsurface connection for buried pump discharge or suction lines, are retained in §331.132(d)(3).

Adopted new §331.132(e) clarifies the optional construction standards for wells utilizing a steel sleeve or PVC sleeve to prevent possible damage to the casing. The adopted new §331.132(f) clarifies and consolidates all the standards for the placement of Class V injection wells in flood-prone areas and

specifies that a Class V injection well should not be located in areas subject to flooding. If a well must be installed in a flood-prone area, the adopted subsection provides for appropriate and more stringent construction standards. For the purpose of this subsection, a flood-prone area is defined as that area within the 100-year flood plain as determined on the Federal Emergency Management Agency (FEMA) Flood Hazard Maps for the National Flood Insurance Program. If FEMA has conducted a flood insurance study of the area, and has mapped the 50-year flood plain, then the smaller geographic areas within the 50-year boundary are considered to be flood-prone.

Adopted new §331.132(g) clarifies and consolidates other protective measures that must be taken when a new well is installed. Adopted §331.132(g)(1) prohibits the commingling of water from different zones of water quality, which causes degradation of any aquifer containing fresh water and adopted §331.132(g)(2) requires that zones containing undesirable groundwater defined as water that is injurious to human health and the environment or water that can cause pollution to land or other waters, be sealed off and confined to the zone of origin. New wells that are completed through a zone or zones containing undesirable groundwater should be constructed so that the undesirable groundwater is isolated from any underground source of drinking water and confined to the zone of origin.

Adopted amendments to §331.133 contain closure standards for Class V wells. The adopted amendments to §331.133(a) clarify that it is the responsibility of the owner/operator of a Class V injection well to properly plug the well when its use is permanently discontinued or the well is abandoned. The adopted amendment to §331.133(b) provides for the method that will be used to pressure fill the well with cement. The adopted amendments to §331.133(c) clarify that an alternative method to subsection (b) for well closure can be used as long as the well is not completed through a

zone or zones containing undesirable groundwater. Adopted amendments to §331.133(d) clarify that an alternative method to subsection (b) for well closure can be used for plugging Class V injection wells that have encountered undesirable groundwater. Adopted subsection (d) requires that bentonite grout with a weight of 9.1 pounds per gallon be used.

FINAL REGULATORY IMPACT ANALYSIS

The commission has reviewed the adopted rulemaking in light of the regulatory analysis requirements of Texas Government Code, §2001.0225, and has determined that the rulemaking is not subject to §2001.0225 because it does not meet the definition of a "major environmental rule" as defined in that statute. "Major environmental rule" means a rule the specific intent of which is to protect the environment or reduce risks to human health from environmental exposure and that may adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. The adopted rules are intended to protect the environment and reduce risks to human health from environmental exposure. Although certain standards have been revised, the adopted amendments reflect what is considered to be current well drilling practice and is not anticipated to adversely affect, in a material way, the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. In addition, §2001.0225 applies only to a major environmental rule the result of which is to: 1) exceed a standard set by federal law, unless the rule is specifically required by state law; 2) exceed an express requirement of state law, unless the rule is specifically required by federal law; 3) exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and

federal program; or 4) adopt a rule solely under the general powers of the agency instead of under a specific state law. The adopted amendments do not exceed a standard set by federal law, exceed an express requirement of state law, nor exceed a requirement of a delegation agreement. The adopted amendments were not developed solely under the general powers of the agency, but are adopted under the authority of TWC, Chapter 27, which authorizes the commission to regulate injection wells. The state standards do not exceed the standard set by federal law because federal regulations, required under Title 42 Public Health and Welfare, §330h(b)(1), contain the minimum requirements and restrictions on a state injection well program and include requirements that prohibit injection which is not authorized by permit or rule and require that no state program which provides for authorization of underground injection by rule may promulgate rules which endanger drinking water sources.

TAKINGS IMPACT ASSESSMENT

The commission has prepared a takings impact assessment for these rules under Texas Government Code, §2007.043. Promulgation and enforcement of these rules will not affect private real property because the rulemaking clarifies the definition of a Class V well to include a closed loop injection well. The rulemaking also provides clearer guidance for the construction and closure standards for Class V wells under the jurisdiction of the commission.

Private property is not affected or burdened by these rules because the rules do not restrict or limit an owner's right to property that would otherwise exist in the absence of the adopted changes. In other words, a property owner may still use his property in any manner he wishes, in accordance with applicable state law and rules of the commission.

COASTAL MANAGEMENT PROGRAM CONSISTENCY REVIEW

This rulemaking is not subject to the Texas Coastal Management Plan (CMP). The rulemaking proposes clearer guidance for the construction and closure of Class V wells under the jurisdiction of the commission. The executive director has reviewed the rulemaking and found that the adopted rules and rule changes do not govern specific actions identified in the CMP as being subject to consistency with the CMP, including air pollution emissions, on-site sewage disposal systems, or underground storage tanks expressly identified under Coastal Coordination Act Implementation Rules, 31 TAC §505.11(b)(2), relating to Actions and Rules Subject to the CMP. Neither do the adopted rules or rule changes qualify as an individual agency action subject to 31 TAC §505.11(a).

PUBLIC HEARING AND COMMENTERS

A public hearing on the proposed amendments to the rules was scheduled for February 23, 2000; however, no one appeared at the hearing to testify. The comment period closed February 29, 2000. Three commenters submitted written comments on the proposed amendments: Southwestern Public Service Company (SPS), Texas Department of Health (TDH), and United States Environmental Protection Agency (EPA). TDH was in support of the proposed rules. SPS and EPA were in support of the proposed rules with suggested changes.

ANALYSIS OF TESTIMONY

TDH commented that the purposes of the proposed rule amendments appear to be to clarify and update existing rules as well as to expand certain sections in order to enhance protection of sources of underground drinking water. TDH commented that nothing in the proposed amendments appears to compromise public health or impose an undue economic burden on the public. TDH commented that based on the potential public health benefit of protecting safe sources of drinking water, TDH supports the proposed rule amendments.

The commission appreciates the comments from the TDH.

EPA commented that the preamble and proposed rule amendments affecting construction and closure requirements appear applicable to all Class V wells and "traditionally" constructed injection wells utilizing a single vertical wellbore to dispose of fluids. However, the amendments do not appear practical in application to Class V injection wells that take the form of shallow commercial size, subsurface fluid distribution systems (i.e., septic system drain fields). EPA also commented that the commission should examine the amendments and make a clear distinction in the rules as to the extent that these requirements may apply to a Class V well utilizing a shallow subsurface fluid distribution system. Under §331.9(a) and (b)(2)(E), the amended language implies that closure and construction standards will be applied to all Class V wells. If the intent of the rulemaking is to set requirements for construction and closure of all Class V well types, similar requirements, practical in application to Class V wells with shallow subsurface fluid distribution systems, would need to be developed.

The commission responds that when the rules were proposed, EPA's regulations on septic systems and subsurface distribution systems were not effective. The requirements proposed by the commission in this rulemaking apply to "traditionally" constructed injection wells utilizing a single vertical wellbore to dispose of fluids. The commission does not intend for the proposed rules to apply to Class V injection wells that take the form of shallow, commercial size, subsurface fluid distribution systems (i.e., septic system drain fields). The commission currently regulates septic systems and subsurface fluid distribution systems under TWC, Chapter 26, and Texas Health and Safety Code (THSC), Chapter 366. Commission rules adopted in 30 TAC Chapters 285 and 309 regulate activities associated with septic systems. The commission will address construction, operation, and closure standards for Class V septic system wells in a future rulemaking and has made no change in response to this comment.

SPS objected to the inclusion of septic system drainfields by EPA in its definition of Class V injection wells and believes that the commission should not follow the lead of EPA in this matter. SPS requested that the commission include a definition of "septic system wells" under §331.11(a)(5) to clarify that a properly designed septic system drainfield (which is already regulated in Texas) is not considered a Class V Injection Well. SPS suggested that the commission should exempt non-residential septic systems from this regulation as long as they receive only sanitary waste, even if they have the potential to receive insignificant amounts of waste due to unintentional small volume leaks, drips, or spills, but cannot reasonably be separated from potential sources of contamination.

The commission disagrees with the commenter regarding the regulation of septic system drainfields as Class V wells. While the commission is not amending the definition of Class V well in this rulemaking, the commission is currently evaluating future rulemaking to propose regulations to implement federal requirements that a septic system well includes the septic system drainfield and that this type of well is classified as a Class V well. Such a project would propose construction, operation, and closure standards for septic system wells in this future rulemaking, and the commission welcomes further comments regarding this issue at that time.

EPA commented that TDLR and the commission both have executive directors. The TDLR is identified in §331.132(a), (b)(1)(B), and (b)(1)(B)(2), which assigns discretionary authority to the executive director for construction standards. The term "executive director" is defined in 30 TAC Chapter 3, but not defined in Chapter 331. There could be some misunderstanding as to which executive director is granted the discretionary authority. The commenter suggested that it may be prudent to distinguish that the executive director referenced in §331.132 is that of the commission, not TDLR.

The commission disagrees with the commenter. Because the term "executive director" is already defined in Chapter 3, it is not necessary to redefine it in Chapter 331. The commission ordinarily only defines a term in a specific chapter if it is not already defined in Chapter 3, or if it has a different meaning from the term already defined in Chapter 3. Since the term "executive director" is standard in agency rules, the commission declines to add it to the definitions in this rulemaking. In addition, TDLR rules require that Class V injection wells be completed to the

standards contained in the commission's Chapter 331 and require that drillers submit the state well report form to the department (the TDLR), not its executive director. Thus, the commission does not believe use of the term "executive director" in this rulemaking will cause confusion to those subject to its applicability.

EPA commented that the proposed rule change in §331.132 assigns construction of all Class V wells, unless otherwise authorized by the executive director, to a water well driller licensed by the TDLR. The commenter stated that it is not clear if the requirement applies to septic system style Class V injection wells, and that it does not seem prudent to require the services of a licensed water well driller for construction of a septic system. If it is intended for all septic system style Class V wells to be "otherwise authorized by the executive director," that condition could be stipulated in the rule.

The commission responds that the proposed rulemaking applies to "traditionally" constructed injection well utilizing a single vertical wellbore to dispose of fluids. The commission will address construction, operation, and closure standards for septic systems in a future rulemaking.

EPA commented that there is no §331.132(a), (b)(1)(B)(1) to precede §331.132(a), (b)(1)(B)(2).

The commission responds that §331.132(b)(1)(A) and (B) refer to reporting requirements prior to and after construction. The next section in the rule is §331.132(b)(2), which contains the reporting requirements for closed loop and air conditioning return flow wells. The commission has reorganized the section to avoid confusion.

EPA commented that the surface completion requirements in §331.132(d) and the surface placement conditions in §331.132(f) appear applicable to traditional wellbore construction and not that of a septic system style injection well. The amendments should reflect, where prudent, a separation of requirements between the two distinctively different types of injection wells.

The commission responds that the proposed rulemaking applies to "traditionally" constructed injection well utilizing a single vertical wellbore to dispose of fluids. As noted earlier, the commission is currently evaluating rulemaking to propose construction, operation, and closure standards for motor vehicle waste disposal wells, large capacity cesspools, and large capacity septic systems to implement new EPA regulations which went into effect April 5, 2000. Also, the construction standards for large capacity septic systems, and subsurface distribution systems are currently regulated by TWC, Chapter 26, THSC, Chapter 366, and Chapter 285 or 309.

SPS commented that a portion of §331.132(d)(1)(C) which states that "Closed loop injection wells which are completed below grade are exempt from the surface completion requirements in this paragraph; however, the provision in subsection (c)(2) of this section must be followed," is unnecessary and adds confusion.

The commission agrees that §331.132(d)(1)(C) is not necessary and has deleted the indicated text.

SPS commented that §331.132(e) is not clear whether a steel sleeve or a PVC sleeve is required or optional.

The commission agrees that the wording in §331.132(e) needs clarification and the commission has changed the wording in the final rule to reflect that the use of a steel or PVC sleeve is optional.

SPS commented that it is not clear whether §331.132(e) applies to closed loop injection wells completed below the ground surface, and if so, how this could be accomplished without the use of a pitless adapter.

The commission agrees that the wording in §331.132(e) needs clarification and the commission has included the language related to subsurface completion for pitless adapters, which was proposed for deletion, back into the final rule in §331.132(d)(3).

EPA commented that the closure standards in §331.133 appear to be applicable only to traditionally constructed Class V injection wells, and that the rule should distinguish any applicability to septic system type wells.

The commission responds that the proposed rulemaking applies to the closure of "traditionally" constructed injection wells utilizing a single vertical wellbore to dispose of fluids. The commission will address the closure standards for septic system type wells in a future rulemaking which will implement new EPA Class V injection well regulations.

EPA commented that when considering closure requirements, the commission is encouraged to consider a notification requirement to inform the commission of the operator's intent to close the well. Such a notice could include proposed closure plans that could be reviewed for compliance with §331.133(c) and/or (d) and approved prior to closure. The pre-closure notice would also allow the commission the opportunity to witness the well closure and/or examine the site for potential contamination prior to closure. The commission should be aware that the recently adopted federal underground injection control regulations, governing motor vehicle waste wells and cesspools, require pre-closure notification (see FR notice dated December 7, 1999).

The commission responds that the EPA only requires preclosure notification for motor vehicle wells and large capacity cesspools. The commission believes that preclosure notification for all Class V wells is unwarranted at this time and agrees to consider EPA's comments again during rulemaking to implement new EPA regulations which went into effect April 5, 2000.

EPA commented that the proposed rules, contained in Subchapter K, addressing additional requirements for aquifer storage wells, were not provided in the attachments to the January 26, 2000 letter.

The commission responds that there were no proposed changes to the rules for Subchapter K. This rulemaking merely clarifies that Aquifer Storage wells are also subject to the construction standards in Subchapter K, which did not require any change to Subchapter K.

STATUTORY AUTHORITY

The amendments are adopted under TWC, Chapter 27. Section 27.003 provides that it is the policy of the state and the purpose of Chapter 27 to maintain the quality of fresh water in the state to the extent consistent with the public health and welfare, the operation of existing industries, and the economic development of the state, to prevent underground injection that may pollute fresh water, and to require the use of all reasonable methods to implement this policy. Section 27.019 requires the commission to adopt rules and procedures reasonably required for the performance of its powers and duties under Chapter 27.

TWC, §5.103 and §5.105, authorize the commission to adopt rules necessary to carry out its responsibilities and duties under the TWC and other laws of Texas.

SUBCHAPTER A: GENERAL PROVISIONS

§331.9, §331.11

§331.9. Injection Authorized by Rule.

(a) Plugging and abandonment of a well authorized by rule at any time after January 1, 1982, shall be accomplished in accordance with the standards of §331.46 of this title (relating to Closure Standards). Class V wells shall be closed according to standards under §331.133 of this title (relating to Closure Standards).

(b) Injection into Class V wells, unless otherwise provided, is authorized by virtue of this rule. Injection into new Class V wells used for the disposal of over 1,000 gallons per day of sewage or sewage effluent must be authorized by a permit from the commission before operations begin.

(1) Well authorization under this section expires upon the effective date of a permit issued under §331.7 of this title (relating to Permit Required).

(2) An owner or operator of a Class V well is prohibited from injecting into the well:

(A) upon the effective date of permit denial;

(B) upon failure to submit a permit application in a timely manner under subsection (c) of this section;

(C) upon failure to submit inventory information in a timely manner under §331.10 of this title (relating to Inventory of Wells Authorized by Rule);

(D) upon failure to comply with a request for information from the executive director in a timely manner; or

(E) upon failure to comply with provisions contained in Subchapter H of this chapter (relating to Standards for Class V Wells) and, if applicable, Subchapter K of this chapter (relating to Additional Requirements for Class V Aquifer Storage Wells).

(c) The executive director may require the owner or operator of an injection well authorized by rule to apply for and obtain an injection well permit. The owner or operator shall submit a complete application within 90 days after the receipt of a letter from the executive director requesting that the owner or operator of an injection well submit an application for permit. Cases for which a permit may be required include, but are not limited to, wells not in compliance with the standards required by this section.

(d) Class IV wells injecting hazardous waste-contaminated ground water that is of acceptable quality to aid remediation and that is being reinjected into the same formation from which it was drawn,

as authorized by §331.6 of this title (relating to Prohibition of Class IV Well Injection), shall be authorized by rule.

§331.11. Classification of Injection Wells.

(a) Injection wells within the jurisdiction of the commission are classified as follows.

(1) Class I:

(A) wells used by generators of hazardous wastes or owners or operators of hazardous waste management facilities to inject hazardous waste, other than Class IV wells;

(B) other industrial and municipal waste disposal wells which inject fluids beneath the lower-most formation which within one quarter mile of the wellbore contains an underground source of drinking water.

(2) Class III. Wells which inject for extraction of minerals, including:

(A) mining of sulfur by the Frasch process;

(B) solution mining of minerals which includes sodium sulfate, sulfur, potash, phosphate, copper, uranium and any other minerals which can be mined by this process.

(3) Class IV. Wells used by generators of hazardous wastes or of radioactive wastes, by owners or operators of hazardous waste management facilities, or by owners or operators of radioactive waste disposal sites to dispose of hazardous wastes or radioactive wastes into or above a formation which within one quarter mile of the wellbore contains an underground source of drinking water.

(4) Class V. Generally, wells covered by this paragraph inject nonhazardous fluids into or above formations that contain USDWs. Class V wells are injection wells within the jurisdiction of the commission, but are not included in Classes I, III, or IV. Class V wells include, but are not limited to:

(A) air conditioning return flow wells used to return to the supply aquifer the water used for heating or cooling in a heat pump;

(B) closed loop injection wells which are closed system geothermal wells used to circulate fluids including water, water with additives, or other fluids or gases through the earth as a heat source or heat sink;

(C) cesspools or other devices that receive wastes, which have an open bottom and sometimes have perforated sides;

(D) cooling water return flow wells used to inject water previously used for cooling;

(E) drainage wells used to drain surface fluid, primarily storm runoff, into a subsurface formation;

(F) dry wells used for the injection of wastes into a subsurface formation;

(G) recharge wells used to replenish the water in an aquifer;

(H) salt water intrusion barrier wells used to inject water into a freshwater aquifer to prevent the intrusion of salt water into the fresh water;

(I) sand backfill wells used to inject a mixture of water and sand, mill tailings, or other solids into mined out portions of subsurface mines;

(J) septic system wells used:

(i) to inject the waste or effluent from a multiple dwelling, business establishment, community, or regional business establishment septic tank; or

(ii) for a multiple dwelling, community, or regional cesspool;

(K) subsidence control wells (not used for the purpose of oil or natural gas production) used to inject fluids into a non-oil or gas producing zone to reduce or eliminate subsidence associated with the overdraft of fresh water; and

(L) aquifer storage wells used for the injection of water for storage and subsequent retrieval for beneficial use.

(b) Class II wells and Class III wells used for brine mining fall within the jurisdiction of the Railroad Commission of Texas.

SUBCHAPTER H: STANDARDS FOR CLASS V WELLS

§§331.131-331.133

STATUTORY AUTHORITY

The amendments are adopted under TWC, Chapter 27. Section 27.003 provides that it is the policy of the state and the purpose of Chapter 27 to maintain the quality of fresh water in the state to the extent consistent with the public health and welfare, the operation of existing industries, and the economic development of the state, to prevent underground injection that may pollute fresh water, and to require the use of all reasonable methods to implement this policy. Section 27.019 requires the commission to adopt rules and procedures reasonably required for the performance of its powers and duties under Chapter 27.

TWC, §5.103 and §5.105, authorize the commission to adopt rules necessary to carry out its responsibilities and duties under the TWC and other laws of Texas.

§331.131. Applicability.

The sections of this subchapter apply to all new Class V injection wells under the jurisdiction of the commission. Aquifer storage wells must also comply with Subchapter K of this chapter (relating to Additional Requirements for Class V Aquifer Storage Wells) in addition to this subchapter.

§331.132. Construction Standards.

(a) All Class V wells shall be completed in accordance with the specifications contained in this section, unless otherwise authorized by the executive director, and shall be installed by a water well driller licensed by the Texas Department of Licensing and Regulation.

(b) Reporting.

(1) Prior to construction. Except for closed loop injection and air conditioning return flow wells, information required under §331.10(a) of this title (relating to Inventory of Wells Authorized by Rule) shall be submitted to the executive director prior to construction.

(2) After completion of construction. Except for closed loop injection and air conditioning return flow wells, the Texas Department of Licensing and Regulation's state well report form shall be completed and submitted to the executive director within 30 days from the date the well construction is completed.

(3) Closed loop and air conditioning return flow wells. No reporting prior to construction is necessary for these two types of wells. The Texas Department of Licensing and Regulation's state well report form shall be completed and submitted to the executive director within 30 days from the date the well construction is completed. Any additives, constituents, or fluids (other than

potable water) that are used in the closed loop injection well system shall be reported in the Water Quality Section on the state well report form.

(c) Sealing of casing.

(1) General. Except for closed loop injection wells, the annular space between the borehole and the casing shall be filled with cement slurry from ground level to a depth of not less than ten feet below the land surface or well head. In areas of shallow, unconfined groundwater aquifers, the cement need not be placed below the static water level. In areas of shallow, confined groundwater aquifers having artesian head, the cement need not be placed below the top of the water-bearing strata.

(2) Closed loop injection well. The annular space of a closed loop injection well shall be backfilled to the total depth with impervious bentonite or a similar material. Where no groundwater or only one zone of groundwater is encountered, sand, gravel, or drill cuttings may be used to backfill up to 30 feet from the surface. The top 30 feet shall be filled with impervious bentonite. Alternative impervious materials may be authorized by the executive director upon request.

(d) Surface completion.

(1) All wells must have a concrete slab or sealing block placed above the cement slurry around the well at the ground surface.

(A) The slab or block shall extend at least two feet from the well in all directions and have a minimum thickness of four inches and shall be separated from the well casing by a plastic or mastic coating or sleeve to prevent bonding of the slab to the casing.

(B) The surface of the slab shall be sloped so that liquid will drain away from the well.

(2) The top of the casing shall extend a minimum of 12 inches above the original ground surface. The well casing shall be capped or completed in a manner that will prevent pollutants from entering the well.

(3) Closed loop injection wells which are completed below grade are exempt from the surface completion standards in this subsection. Pitless adapters may be used in close loop wells provided that:

(A) the adapter is welded to the casing or fitted with another suitably effective seal; and

(B) the annular space between the borehole and the casing is filled with cement to a depth not less than 15 feet below the adapter connection.

(e) Optional use of a steel or PVC sleeve. If the use of a steel or PVC sleeve is necessary to prevent possible damage to the casing, the steel sleeve shall be a minimum of 3/16 inches in thickness or the PVC sleeve shall be a minimum of Schedule 80 sun-resistant and 24 inches in length, and shall extend 12 inches into the cement slurry.

(f) Well placement in a flood-prone area. All wells shall be located in areas not generally subject to flooding. If a well must be placed in a flood-prone area, it shall be completed with a watertight sanitary well seal maintain a junction between the casing and injection tubing, and a steel sleeve extending a minimum of 36 inches above ground level and 24 inches below the ground surface shall be used. For the purpose of this subsection, a flood-prone area is defined as that area within the 100-year flood plain as determined on the Federal Emergency Management Agency (FEMA) Flood Hazard Maps for the National Flood Insurance Program. If FEMA has conducted a flood insurance study of the area, and has mapped the 50-year flood plain, then the smaller geographic areas within the 50-year boundary are considered to be flood-prone. Closed loop injection wells and air conditioning return flow wells are exempt from the completion standards in this subsection.

(g) Other protection measures.

(1) Commingling prohibited. All wells, especially those that are gravel packed, shall be completed so that aquifers or zones containing waters that are known to differ significantly in chemical quality are not allowed to commingle through the borehole-casing annulus or the gravel pack and cause quality degradation of any aquifer containing fresh water.

(2) Undesirable groundwater. When undesirable groundwater, which is water that is injurious to human health and the environment or water that can cause pollution to land or other waters, is encountered in a Class V well, the well shall be constructed so that the undesirable groundwater is isolated from any underground source of drinking water and is confined to the zone(s) of origin.

§331.133. Closure Standards.

(a) It is the responsibility of the owner and/or operator to plug or have plugged, under standards set forth in this section, a Class V well which is to be permanently discontinued or abandoned.

(b) Closure shall be accomplished by removing all of the removable casing and the entire well shall be pressure filled via a tremie pipe with cement from bottom to the land surface.

(c) As an alternative to the procedure in subsection (b) of this section, if a Class V well is not completed through zones containing undesirable groundwater, water that is injurious to human health and the environment or water that can cause pollution to land or other waters, the well may be filled with fine sand, clay, or heavy mud followed by a cement plug extending from land surface to a depth of not less than ten feet below the land surface.

(d) As an alternative to the procedure in subsection (b) of this section, if a Class V well is completed through zones containing undesirable groundwater, water that is injurious to human health

and the environment or water that can cause pollution to land or other waters, either the zone(s) containing undesirable groundwater or the fresh groundwater zone(s) shall be isolated with cement plugs and the remainder of the wellbore filled with bentonite grout (9.1 pounds per gallon mud or more) followed by a cement plug extending from land surface to a depth of not less than ten feet below the land surface.