SUBCHAPTER K: ADDITIONAL REQUIREMENTS FOR CLASS V INJECTION WELLS ASSOCIATED WITH AQUIFER STORAGE AND RECOVERY
§§331.181 - 331.186
Effective May 19, 2016

§331.181. Applicability.

In addition to the requirements of Subchapter H of this chapter (relating to Standards for Class V Wells), the requirements of this subchapter apply to all Class V aquifer storage and recovery injection wells.

Adopted April 27, 2016 Effective May 19, 2016

§331.182. Area of Review.

The area of review for an aquifer storage and recovery (ASR) project is the area determined by a radius of 1/2 mile from the proposed ASR injection well. For an ASR project that includes more than one proposed injection well, the area of review is the area determined by a radius of 1/2 mile from the centroid of the injection well field. If the extent of the underground stored water of the ASR project will exceed the area determined by the 1/2 mile radius as described in this section, the area of review is the area determined by the projected extent of the underground stored water as calculated by using site-specific hydrogeologic information. In the application for authorization, the applicant shall provide information on the activities within the area of review including the following factors and their adverse impacts, if any, on the injection operation:

(1) location of all artificial penetrations that penetrate the interval to be used for aquifer storage and recovery, including but not limited to: water wells and abandoned water wells from commission well files or ground water district files; oil and gas wells and saltwater injection wells from the Railroad Commission of Texas files; and waste disposal wells/other injection wells from the commission disposal well files;

(2) completion and construction information, where available, for identified artificial penetrations;

(3) site specific, significant geologic features, such as faults and fractures; and

(4) all information required for the consideration of an aquifer storage and recovery injection well under §331.186(a) of this title (relating to Additional Requirements).

Adopted April 27, 2016 Effective May 19, 2016

§331.183. Construction and Closure Standards.

All Class V aquifer storage and recovery (ASR) injection wells shall be designed, constructed, completed, and closed to prevent commingling, through the wellbore and casing, of injection waters with other fluids outside of the authorized injection zone; mixing through the wellbore and casing of fluids from aquifers of substantively different water quality; and infiltration through the wellbore and casing of water from the surface into ground water zones.

(1) Plans and specifications. Except as specifically required in the terms of the Class V injection well authorization, the drilling and completion of a Class V ASR injection well shall be done in accordance with the requirements of §331.132 of this title (relating to Construction Standards) and the closure of a Class V ASR injection well shall be done in accordance with the requirements of §331.133 of this title (relating to Closure Standards for Injection Wells).

(A) If the project operator proposes to change the injection interval to one not reviewed during the authorization process, the project operator shall notify the executive director immediately. The project operator may not inject into any unauthorized zone.

(B) The executive director shall be notified immediately of any other changes, including but not limited to, changes in the completion of the well, changes in the setting of screens, and changes in the injection intervals within the authorized injection zone.

(2) Construction materials. Casing materials for Class V ASR injection wells shall be constructed of materials resistant to corrosion.

(3) Construction and workover supervision. All phases of any ASR injection well construction, workover or closure shall be supervised by qualified individuals who are knowledgeable and experienced in practical drilling engineering and who are familiar with the special conditions and requirements of injection well and water well construction.

(4) An ASR production well, or an ASR injection well that is also serving as an ASR production well, and is providing water to a public water system must comply with the applicable requirements for groundwater sources in §290.41 of this title (relating to Water Sources).

(5) All ASR injection wells and all ASR production wells associated with a single ASR project must be located:

(A) within a continuous perimeter boundary of one parcel of land; or

(B) within two or more adjacent parcels of land under the common ownership, lease, joint operating agreement, or contract.

Adopted April 27, 2016 Effective May 19, 2016

§331.184. Operating Requirements.

(a) All Class V aquifer storage and recovery (ASR) injection wells shall be operated in such a manner that injection will not endanger drinking water sources. Underground injection endangers drinking water sources if such injection may result in the presence in underground water which supplies or can reasonably be expected to supply any public water system of any contaminant, and if the presence of such contaminant may result in such system's not complying with any national primary drinking water regulation or may otherwise adversely affect the health of persons.

(b) Injection pressure at the wellhead shall not exceed a maximum which shall be calculated so as to assure the pressure in the injection zone does not cause movement of fluid out of the injection zone.

(c) The owner or operator of an ASR injection well that has ceased operations for more than two years shall notify the executive director 30 days prior to resuming operation of the well.

(d) The owner or operator shall maintain the mechanical integrity of all wells operated under this section.

(e) The quality of the water injected at an ASR project must meet the requirements in §331.186(a)(1) of this title (relating to Additional Requirements). Water recovered from an ASR project that is provided to a public water system is subject to all applicable requirements, maximum contaminant levels, and treatment techniques under Chapter 290 of this title (relating to Public Drinking Water).

(f) All ASR injection and ASR production wells must be installed with a flow meter for measuring the volume of water injected and the volume of the water recovered.

(g) This subsection only applies to an ASR project that is located within the jurisdiction of a groundwater conservation district or other special-purpose district with the authority to regulate the withdrawal of groundwater.

(1) An authorization or permit issued under this chapter may not authorize a volume of water to be recovered that exceeds the volume of water that is injected or the volume of injected water that the commission determines can be recovered, whichever is less; and

(2) The requirements of Texas Water Code, Chapter 36, Subchapter N apply to the volume of water recovered from an ASR project that exceeds the volume of water the commission determines can be recovered, and otherwise as applicable.

Adopted April 27, 2016 Effective May 19, 2016

§331.185. Monitoring and Reporting Requirements.

(a) An aquifer storage and recovery (ASR) project operator shall monitor each ASR injection well and each ASR production well associated with an ASR project. Each calendar month the project operator shall provide the executive director either a written or electronic report of the following information for the previous month:

(1) the volume of water injected for storage;

(2) the volume of water recovered for beneficial use;

(3) monthly average injection pressures; and

(4) other information as determined by the executive director as necessary for the protection of underground sources of drinking water.

(b) On an annual basis, an ASR project operator shall perform water quality testing on water to be injected at an ASR project and on water that is recovered from that project. The ASR project operator shall provide the executive director either a written or electronic report of the results of this testing. The report shall include the test results for all water quality parameters identified in the individual permit, general permit, or authorization by rule.

Adopted April 27, 2016 Effective May 19, 2016

§331.186. Additional Requirements Necessary for Final Project Authorization.

(a) The executive director or commission shall consider the following before issuing an individual permit, a general permit, or an authorization by rule for an aquifer storage and recovery (ASR) injection well:

(1) whether the injection of water will comply with the standards set forth under the federal Safe Drinking Water Act (42 United States Code, §§300f, et seq);

(2) the extent to which the cumulative volume of water injected for storage in the receiving geologic formation can be successfully recovered from the geologic formation for beneficial use, taking into account that the injected water may be comingled to some degree with native groundwater;

(3) the effect of the ASR project on existing water wells; and

(4) whether the introduction of water into the receiving geologic formation will alter the physical, chemical, or biological quality of the native groundwater to a degree that would:

(A) render the groundwater produced from the receiving formation harmful or detrimental to people, animals, vegetation, or property; or

(B) require an unreasonably higher level of treatment of the groundwater produced from the receiving geologic formation than is necessary for the native groundwater in order to render the groundwater suitable for beneficial use.

(b) Upon completion of an ASR injection well, the following information shall be submitted to the executive director within 30 days of receipt of the results of all analyses and test results:

(1) as-built drilling and completion data on the well;

(2) all logging and testing data on the well;

(3) formation fluid analyses;

(4) injection fluid analyses;

(5) injectivity and pumping tests determining well capacity and reservoir characteristics;

(6) hydrogeologic modeling, with supporting data, predicting mixing zone characteristics and injection fluid movement and quality; and

(7) other information as determined by the executive director as necessary for the protection of underground sources of drinking water.