

What are the Permitting Processes for a Class II Oil and Gas Disposal Well?

The permitting process for a Class II oil and gas disposal well involves the following requirements and safeguards:

- Public notice.
- Hearing opportunities.
- Review of area geology.
- Review of the area around the proposed oil and gas waste disposal well to determine the existence and completion of other wells penetrating the same geologic formation(s) proposed for disposal.

A Class II disposal well operator must file a permit application and other required information with the Railroad Commission of Texas (RRC). The information must provide sufficient data to demonstrate that Underground Sources of Drinking Water (USDWs) will be protected, including:

- Hydrogeological considerations used in the well siting and design, especially information on all USDWs penetrated by the injection well.
- The structural integrity of the well.
- The specific operational considerations used in well design.
- Information on the status of wells in the area of review that penetrate the injection zone.
- The proposed monitoring of the facility.

The area of review for newly permitted injection wells is a minimum of 0.25-mile radius. This review radius will be greater if the radius of influence from injection is determined to extend beyond the minimum radius.

Disposal well operators must submit data on all known existing and abandoned oil and gas wells that penetrate the injection zone within the area of review of all newly drilled or converted injection wells. The operator must submit information that would allow calculation of the injection pressure curve and information that provides details on the casing and cementing for all abandoned oil and gas wells in the area of review. The RRC uses this information to determine if oil and gas wells in the area of review require corrective action prior to commencement of injection.

Effective Sept. 1, 2011, RRC is responsible for determining that a proposed injection zone for a Class II injection well is not freshwater-bearing, and that injection into that interval will not endanger freshwater or a USDW in the area of the proposed Class II injection well (Texas Water Code, Section 27.033,

<https://statutes.capitol.texas.gov/Docs/WA/htm/WA.27.htm#27.033>). RRC staff review each Class II injection well permit application to determine the base of usable water (groundwater with 3,000 milligrams per liter or less total dissolved solids), and to determine if sufficient impermeable strata (layers of rock such as shale) are present between the base of usable water and the top of the proposed injection zone in order to isolate usable water from the injection zone. RRC guidance (<https://www.rrc.texas.gov/oil-and-gas/publications-and-notice/manuals/injection-storage-manual/injection-storage-narrative/chapter-iii/>) requires at least 250 feet of clay or shale between the base of usable water and the top of the proposed injection.

All permits include a number of requirements to demonstrate that casing and cementing are adequate to prevent the movement of fluid into or between USDWs. Permit requirements include: a calculated maximum limit for operating pressure (to avoid initiating or propagating fractures that could otherwise allow fluid movement into a USDW); requiring monitoring and reporting; and requiring the operator to cease injection immediately if a permitted injection well fails mechanical integrity, and either repair and retest or properly plug the well within 90 days.

Resources and Useful Links

- RRC *Injection and Disposal Wells Frequently Asked Questions (FAQs)*, <https://www.rrc.texas.gov/about-us/faqs/oil-gas-faq/injection-and-disposal-wells-faqs/>.
- RRC's *Injection Storage Manual*, <https://www.rrc.texas.gov/oil-and-gas/publications-and-notice/manuals/injection-storage-manual/>.
- TCEQ's "Underground Injection Control Permits" webpage, https://www.tceq.texas.gov/permitting/radmat/uic_permits/uic.html.
- TCEQ's webpage, "Oil and Gas Facilities: Additional Information," includes regulations on air, water, and waste related to the oil and gas industry in Texas, https://www.tceq.texas.gov/assistance/industry/oil-and-gas/oilgas_additional.html.
- U.S. Environmental Protection Agency's (EPA's) webpage, "Protecting Underground Sources of Drinking Water from Underground Injection (UIC)," <https://www.epa.gov/uic>.
- EPA's webpage, "General Information About Injection Wells," includes links to individual web pages for each of the UIC well types, Class I – VI, which include comprehensive information on each injection well type as well as cross-sectional diagrams, https://www.epa.gov/uic/general-information-about-injection-wells#how_protect.
- EPA's SDWA website, <https://www.epa.gov/sdwa>.
- The Ground Water Protection Council (GWPC) website provides information and links relating to wells, underground injection practices, and groundwater protection, <https://www.gwpc.org/>.

- The Texas Groundwater Protection Committee (TGPC) Oil, Gas, & Mining webpage has additional information and links on this subject, <https://tgpc.texas.gov/oil-gas-mining>.

Other Frequently Asked Questions (FAQs)

To find additional FAQs visit the Texas Groundwater Protection Committee's FAQ webpage at <https://tgpc.texas.gov/frequently-asked-questions-faqs>.