



CLASS V UIC STUDY FACT SHEET *SEWAGE TREATMENT EFFLUENT WELLS*

What is a sewage treatment effluent (STE) well?	Class V STE wells are used for the shallow disposal of treated sanitary waste from publicly owned treatment works or treated effluent from a privately owned treatment facility that receives only sanitary waste. In addition to being used for the purpose of wastewater disposal, STE wells are commonly used where injection will aid in aquifer recharge or subsidence control, or to prevent salt water intrusion.
What types of fluids are injected into STE wells?	Fluids generally subjected to secondary or tertiary treatment in a municipal wastewater treatment plant or a privately owned wastewater treatment plant.
Do injectate constituents exceed drinking water standards at the point of injection?	Secondary treated effluent may contain fecal coliform and nitrates at concentrations above primary drinking water standards, and either secondary or tertiary treated effluent also may exceed secondary drinking water standards for chloride, sulfate, or total dissolved solids. Available injectate quality data for STE wells show that injectate samples have exceeded drinking water standards for fecal coliform, nitrates, total dissolved solids, and pesticides at at least one facility. Also, available information indicates that at least one facility is permitted to discharge injectate that exceeds the secondary drinking water standard for chloride.
What are the characteristics of the injection zone of a STE well?	Some STE wells inject into shallow (<50 feet) aquifers that are of extremely poor quality and that are not likely to be used as sources of drinking water. However, other wells are used to inject treated wastewater effluent for aquifer recharge, and may be injecting into aquifers of drinking water quality.
Are there any contamination incidents associated with STE wells?	Several studies and incidents have shown that STE wells may have contributed to or caused ground water or surface water contamination. One study showed nitrate contamination of onsite ground water at a STE site in NH where both primary treated effluent and raw septage were released into a leach field. Two STE wells on the Island of Maui, HI were thought to be causing surface water contamination through migration of nitrates in the injectate to surface water bodies.
Are STE wells vulnerable to spills or illicit discharges?	STE wells are not vulnerable to spills or illicit discharges. The injectate is treated wastewater, and the wastewater treatment plants that generate the injectate are generally subject to effluent quality standards and monitoring, reporting, and record keeping requirements.
How many STE wells exist in the United States?	There are 1,675 documented sewage treatment wells and more than 1,739 wells estimated to exist in the United States.
Where are STE wells located within the United States?	More than 95 percent of the documented wells are located in five states: AZ (79); CA (205); FL (830); HI (378); and MA (105). NY did not report any documented STE wells in the state, but reported that less than 50 wells may actually exist.
How are STE wells regulated in states with the largest number of this type of well?	<i>Permit by rule:</i> ID, TX <i>Aquifer Protection Program Permit:</i> AZ <i>Ground Water Discharge Permit:</i> MA, NH, and WI (for discharge into a shallow subsurface absorption field located in the unsaturated zone above the water table). <i>Individual permit:</i> CA, FL, HI, WV, OR, WY <i>Banned:</i> WI (for direct discharge from a sewage treatment plant into a saturated formation)
Where can I obtain additional information on STE wells?	For general information, contact the Safe Drinking Water Hotline, toll-free 800-426-4791. The Safe Drinking Water Hotline is open Monday through Friday, excluding federal holidays, from 9:00 a.m. to 5:30 p.m. Eastern Standard Time. For technical inquiries, contact Amber Moreen, Underground Injection Control Program, Office of Ground Water and Drinking Water (mail code 4606), EPA, 401 M Street, SW, Washington, D.C., 20460. Phone: 202-260-4891. E-mail: moreen.amber@epa.gov . The complete Class V UIC Study (EPA/816-R-99-014, September 1999), which includes a volume addressing STE wells (Volume 7), can be found at http://www.epa.gov/OGWDW/uic/cl5study.html .