

GROUNDWATER

LEGAL and REGULATORY ASPECTS

The Missouri is a river “ . . . that goes traveling sidewise, that interferes in politics, rearranges geography, and dabbles in real estate. It cuts corners, runs around at night, lunches on levees, and swallows islands and small villages for dessert.”

– G. Fitch, 1907, as quoted in *Missouri River News*, January 2001, article by Ryan Roenfeld

The importance of water resources in Iowa has led to passage of laws to protect and regulate its use. The Iowa Code [section 455B.171] defines “water of the state” to mean: “. . . any stream, lake, pond, marsh, watercourse, waterway, well, spring, reservoir, aquifer, irrigation system, drainage system, and any other body or accumulation of water, surface or underground, natural or artificial, public or private, which are contained within, flow through or border upon the state or any portion thereof.” Jurisdiction to prevent, abate, or control water pollution and to conduct the public water supply program is given to the Iowa Department of Natural Resources. The IDNR carries out responsibilities of the state related to public and private water supplies and sewage disposal systems for the protection of the environment and the health and safety of Iowa citizens. County boards of health adopt standards at least as stringent as those of the state and regulate both private water supplies



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and sewage disposal systems.

The IDNR protects our water supplies through a set of environmental rules, the *Iowa Administrative Code (IAC)*, Part 567. Some rules address drinking water quality concerns, including construction standards for private wells (567 IAC 38, 49), well plugging requirements (567 IAC 39), public water-supply design and

operation (567 IAC 40, 41, 42, 43), the drinking-water revolving fund (567 IAC 44), whereby low-interest loans are made available to certain public drinking-water supplies for facility improvements, and the grants-to-counties program (567 IAC 47), whereby funds are made available for testing, rehabilitation, and closing of private wells. Other rules address water quantity concerns, including water withdrawals, water diversion, water storage, and water rights (567 IAC 50, 51, 52, 53, 54, 55). Protecting our water supplies also extends to how we handle wastewater effluent, wastewater plant construction and operation, septic tanks, wastewater treatment limitations and prohibitions, manure, land application of sewage sludge, and the application of aquatic pesticides to waters (567 IAC

Title IV). Rules are in place for certification of public water-supply operators, wastewater treatment plant operators, well contractors, and water-testing laboratories (567 IAC Title VI). Solid waste, land application of sludge and solid waste, spills and hazardous conditions, and hazardous waste are also regulated (567 IAC Title VIII, Title IX, Title X, Title XI).

Other rules enable the IDNR to assure that Iowa's water resources are put to beneficial use, that the resource is not used indiscriminately (567 IAC 50, 51, 52), and that conservation and protection are maintained. For example, users of large volumes of water (greater than 25,000 gallons per day) need a water withdrawal permit, regardless of the intended use and regardless of whether it is surface water or groundwater. Construction standards for private water wells insure that individual water supplies are safe from contamination and that aquifers are protected from contamination, thereby protecting public health. Certain criteria also apply to groundwater withdrawals. For example, wells in alluvial aquifers adjacent to streams with drainage areas of less than 50 square miles are not allowed to pump in excess of 200 gallons per minute (gpm). Wells close to such streams may not pump when stream flow falls below a protected flow threshold.

Additionally, two of the state's major sandstone aquifers are protected from overuse (567 IAC 52). Withdrawals from the Cambrian-Ordovician aquifer are limited to 200 gpm for new irrigation, recreational, and aesthetic-use permits. New permits for industrial and power generation are limited to less than 2,000 gpm. Also, the maximum allowable decline in the potentiometric level of the Cambrian-Ordovician aquifer is 200 feet from a 1977 baseline map. The Dakota aquifer is likewise protected from excessive use.

For withdrawal rates in excess of 200 gpm, permit holders must monitor water levels within the aquifer using monitoring wells. If water level declines are a serious threat, then certain types of groundwater use have priority, for example public water supplies.

Though seldom used, a defined geographic area may be designated as "a protected source area" (567 IAC 53). Such areas are designated on a case-by-case basis to preserve water availability for beneficial use, to minimize migration of a contaminant plume in a groundwater aquifer, to maintain surface-water quality, or to preserve surface-water flow. Withdrawal of groundwater from a protected source area by non-regulated wells (e.g., private wells) can be restricted or denied, if necessary.

Private well construction permits are issued by individual counties (567 IAC 38), and well construction standards are set forth in 567 IAC 49. Construction standards notwithstanding, occasionally conflicts arise from well interference problems caused by simultaneous pumping of two or more nearby wells. 567 IAC 54 is used to resolve situations where a permitted use causes interference in a non-regulated well. Of course, this assumes that there was an adequate water supply for the non-regulated user prior to the well interference claim. Problems are resolved by modifying the affected well or by changing the conditions of permitted use.

The rules outlined here cover a wide range of activities related to specific uses of the state's groundwater, with other regulations designed for protection of the resource. One of the best ways that individual well owners can help protect the state's groundwater resources is by making sure that all abandoned wells on their property are properly plugged, thereby permanently sealing off contamination to individual aquifers (567 IAC 39).