

567—49.7(455B) General construction requirements. Wells shall be planned and constructed to adapt to the geologic and groundwater conditions of the proposed well site to ensure reasonable utilization of every natural protection against contamination of the water-bearing formation(s) and the exclusion of possible sources of contamination, to attempt to produce bacterially safe water which is free of health-related problems.

49.7(1) *Water used in construction.* Water used in the construction process shall be obtained from a potable water source that will not result in contamination of the well. Water used for drilling shall be treated with 3 pints of 5.25 percent sodium hypochlorite solution per 100 gallons of water or 0.25 pounds of 65 percent calcium hypochlorite per 100 gallons of water or other additives to produce an equivalent concentration of chlorine residual (50 ppm).

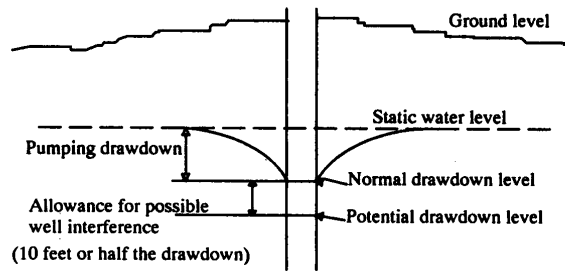
49.7(2) *Wellhead.* The upper terminal casing of all wells shall extend at least 12 inches above established grade or pump house floor, or the 100-year flood level, whichever is higher. A well cap or sanitary seal shall be installed immediately following well completion. A well cap shall be used on an exposed well, a sanitary seal only on a well terminating within a wellhouse. Any openings in the cap or seal, such as for pump wiring or water depth measurement, shall be properly grommeted or sealed except properly screened and oriented vent openings.

The ground surface immediately adjacent to the well casing shall be compacted and graded so that surface water is diverted away from the casing. Well platforms are not recommended other than those used as pump house floors as indicated in 49.12(2).

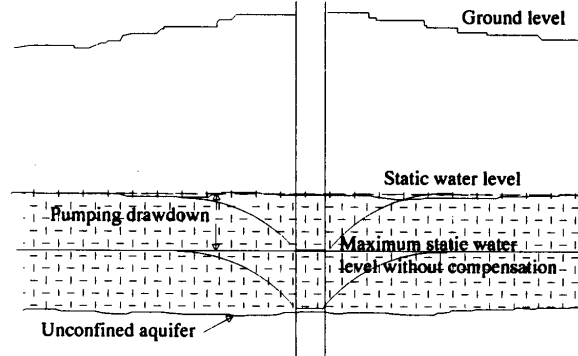
49.7(3) *Criteria for well interference protection.* 567—Chapter 54 provides an administrative process for owners of nonregulated wells to receive compensation for well interference caused by permitted uses. To be eligible for compensation due to well interference, nonregulated wells constructed after July 1, 1986, must be constructed to allow for some potential well interference.

Allowance for potential well interference is accomplished by constructing a nonregulated well to anticipate a lowering of the static head of the well which may be caused by interference from a nearby permitted use well.

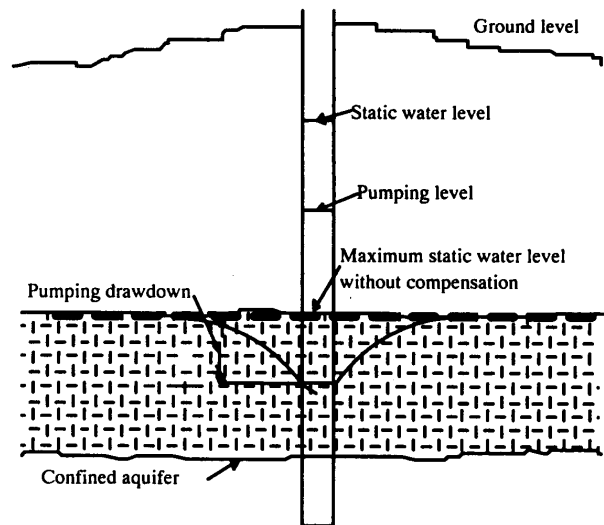
a. The well must be drilled deep enough to allow for setting the pump at least 10 feet or half the normal pumping drawdown, whichever is greater, below the initial recommended setting depth.



b. If the well draws from an unconfined aquifer, the static water level may drop to half the saturated thickness of the aquifer before well interference is considered, if the calculation in "a" above should indicate a shallower depth. Shallow aquifers that are only slightly confined may be classified as unconfined aquifers for this purpose.



c. Where a well penetrates a confined aquifer, the static water level is protected only to the top of the aquifer if the calculation in "a" above should indicate a deeper level.



d. Protected levels for flowing wells will be considered the top of the confined aquifer or 100 feet below the surface, whichever is higher. Flowing wells must be constructed to accommodate a pump capable of supplying a sufficient water supply at protected levels.

The well design also needs to consider drought and reduced well efficiency. (Additional information is contained in 567—Chapter 54.)

A well that is used to withdraw more than 25,000 gallons of water per day requires a water use permit from the Iowa department of natural resources. Upon obtaining such a permit, the well is called

a permitted use. If a permitted use exists prior to the construction of a well without a water use permit, no compensation for well interference will be allowed unless a significant change in the permitted use occurs. A physical change to withdrawal facilities may be considered a significant change to a permitted use (e.g., moving the withdrawal location, installing a new well, or installing a higher capacity pump). A person desiring to construct a well not requiring a water use permit should first obtain information concerning nearby permitted use wells. The department of natural resources will provide information on permitted use wells upon request.

49.7(4) *Access port for measurement of water levels.* Permitted use wells shall be equipped with an access port having a minimum diameter of $\frac{3}{4}$ inch. The access port shall be fitted with a threaded cap or plug and be located to allow insertion of a steel tape or electric probe into the well for measurement of water levels. When a spool type of pitless adapter is used which obstructs clear access to the water, a $\frac{3}{4}$ -inch pipe shall be attached to the spool and brought to the surface below the well cap to allow water level measurements. Wells not requiring a water use permit should be constructed with an access port for water level measurement for possible future well interference concerns.

49.7(5) *Interconnection of aquifers.* There may be local confining beds that serve an important protective function. Permitted use wells shall use casing and grouting to maintain a hydraulic separation between distinct aquifers separated by confining intervals. Extreme caution should be exercised in the construction of non-permitted use wells if allowing the well to connect aquifers across confining intervals, particularly in areas where that would open the aquifer to surficial contamination, i.e., in areas where the upper rock unit is unconfined or contains less than 40 feet of unconsolidated materials. The administrative authority shall be consulted for possible local regulations when interconnection of aquifers across confining intervals is anticipated.