# Chelan-Douglas Health District

## Pump testing to demonstrate well capacity
## of Private wells (1 or 2 connections)

A flow of 400 gallons per day is the minimum acceptable volume of water for an individual residence. To determine if the well will produce at least 400 gallons per day, your well log must show that the test was run long enough to remove at least 400 gallons PLUS the well storage within 24 hours. Well storage is the amount of water that was in the well before pumping began. Well storage is calculated by multiplying the depth of the water standing over the pump (the distance between the static water level and the pump depth) multiplied by 1.44 gallons per foot for a six inch well diameter. For other diameters, the gallons per foot equals 0.04 times the square of the diameter in inches.

If the test was not run long enough to withdraw this volume, another pump test will be necessary. If adequate capacity cannot be shown using the less accurate bailer or air tests, one should consider repeating the test using a submersible pump.

**Example**: A six-inch well to serve two homes is drilled 320 feet, the pump depth is 280 feet and the static water level is 40 feet. The depth of water standing over the pump is

$$280 – 40 = 240 \text{ feet.}$$

The amount of well storage is

$$240 \text{ x } 1.44 = 346 \text{ gallons.}$$

The amount of water to be removed by the pump test is

$$346 + (400 \text{ x } 2) = 1146 \text{ gallons.}$$

**Note**: Pump testing of wells that will serve public water systems must follow different and more detailed procedures. Some recommended procedures are described in Appendix E of the Department of Health "Water System Design Manual", available at:

http://www.doh.wa.gov/ehp/dw/DesignManual/wsdm_appendix_E.DOC.

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