

## CHAPTER 8

### PUMP TESTS

To demonstrate an adequate water supply, the applicant shall complete a water well pump and recovery test (well test) of the proposed water supply well that meets the requirements shown in Table 1 below, and the following requirements:

TABLE 1

	Criteria
Pumping Duration	12 hours minimum
Pumping Rate	5 gpm minimum
Recovery Time	24 hours maximum 100% recovery
Length of Wetted Column in Well	None required
Report Required	Form with continuous draw down and recovery levels
Considerations for Number of Bedrooms	Yes, determination of number of bedrooms in accordance with Environmental Health Dept. Policy # 7.3
Certification Required	Licensed Water Well Driller Pump Contractor, CA. Reg. Civil Eng. or Geologist

- 1) The well test shall be performed under the immediate supervision of a California Licensed Water Well or Pump Contractor, or a California Registered Civil Engineer or Geologist.
- 2) The County may inspect well test in-progress at any time to observe testing methods and results. The County may also measure the water level in the test well prior to or within 15 days after the testing was completed to verify the static water level.
- 3) The well test shall not be initiated until the well has been idle for a period of at least seventy-two hours and water level has become static.
- 4) The required well capacity considers usage by occupants, the requirements of the land itself and a safety factor. The water requirement for occupants is based on a per capita use of 100 gallons per day (gpd). This requirement is increased by a safety factor (SF) of 4 to account for the long term aspects of the water requirement.
- 5) Allowance of water for the land (parcel) and includes such other uses as irrigation, hot tubs and pools. Water for these uses considers a maximum of one acre with no safety factor and is based upon 36 inches of evaporation per year including consideration of rainfall:

$$3 \times 43560 \times 7.48 / 365 = 2678 \text{ gallons per day (gpd)}$$

- 5) continued:  
Parcels larger than one acre will be considered to have a maximum land or parcel demand no greater than the demand of a one acre parcel and therefore 2678 gallons per day is the maximum estimate for parcel water demand.
- 6) The Water Resources Division of the Public Works Agency shall be notified by the person who will supervise and certify the testing at least 48 hours prior to initiation of the well test. Call (805) 654-2024 or 654-2904. Prior notification is needed to insure that the testing is properly conducted so that retesting is not necessary, and so the County will have an opportunity to observe portions of the test.
- 7) Use of the current County test form to record test results is required.
- 8) If the pump breaks suction at any time during the pumping period, the test shall be stopped and restarted after the well has again reached a static water level.
- 9) The recovery portion of the well test shall begin immediately upon completion of the pump test. Measurements of the water levels shall be recorded during the time they are returning to static water level. The well test may be terminated prior to the required recovery period, if the groundwater level returns to the original static water level before the full recovery period has elapsed.
- 10) Test results shall be submitted to the County Water Resources Division of the Public Works Agency on the current Water Well Pump and Recovery Test recording form, along with any other pertinent information.
- 11) The depth of water in a well shall be determined by electrical sounder, airline or digitized sounding equipment. Tapes and acoustical sounding equipment are not acceptable.

#### **Water Well Pass-or-Fail Criteria**

The following procedure shall be used to evaluate the well test for wells serving private domestic water systems with less than five service connections:

- 1) A minimum flow of five gallons per minute (gpm) is required to maintain net storage during the use of some appliances. A well that will not produce at least five gpm is not acceptable. Therefore, five gpm shall be used for testing except, the pumping rate may exceed five gpm and the listed pumping time reduced to attain the gpd required in the last column of Table 2 below.
- 2) The maximum recovery time shall be 24 hours for any alternative.
- 3) Water requirements of separate structures (with discontinuous roofs), such as a guest house, an additional home, or other structures on the same parcel having a water requirement, will be considered cumulatively. This means that a separate structure will add a water requirement to the original structure as opposed to creating a separate requirement.
- 4) The number of bedrooms shall be determined by application of the County Environmental Health Department Policy Number 7.3 listed at the end of Chapter 8. The first bedroom of each separate structure having a water requirement will count for 2 persons. An examples are: a 3 bedroom house + 2 bedroom guest house = 7 persons (using Table 2 for 7 people - pump 18 hours); 2 one bedroom houses = 4 persons (using Table 2 for 4 persons - pump 15 hours). The minimum requirement for any well shall be at least equal to the water demand for a one bedroom house.
- 5) For the purpose of determining the water requirement, a structure has a water requirement if there is a

sink and water closet (commode) plus a room(s) that could be used for sleeping. For example: a structure with a water closet and a sink plus two rooms that are being used as offices would have a water requirement for four persons. Structures having no sink or no water closet do not have a water requirement. A one room storage shed or a barn with either a sink, or a water closet has no water requirement. Separating structures to avoid a water requirement is not allowable.

- 6) Multiple wells may be used to satisfy water requirements provided each well produces a minimum of five gpm and the wells are tested concurrently. Multiple wells may be tested separately provided each well produces at least five gpm and the wells are at least 500 feet apart.
- 7) The dynamic rate of drawdown shall stabilize for a minimum of one hour immediately prior to completion of the pumping test. Wells not meeting this requirement shall not pass the test.

**TABLE 2**

	gpd per bdm.	gpd with SF=4	gpd for Land	Total gpd	Hours Pumped @ 5 gpm	USE	
						hours	gallons
1 bedroom	200	800	2678	3478	11.59	12	3600
2 bedroom	300	1200	2678	3878	12.93	13	3900
3 bedroom	400	1600	2678	4278	14.26	15	4500
4 bedroom	500	2000	2678	4678	15.59	16	4800
5 bedroom	600	2400	2678	5078	16.93	17	5100
6 bedroom	700	2800	2678	5478	18.26	18	5400
7 bedroom	800	3200	2678	5878	19.59	20	6000

SF = safety factor

gpd = gallons per day

gpm = gallons per minute

ENVIRONMENTAL HEALTH DEPARTMENT

POLICIES & PROCEDURES MANUAL

POLICY #: 7.3

SUBJECT: ISDS

ISSUED: \_\_\_\_\_

BEDROOM DETERMINATION

EFFECTIVE: January 18, 1995

SUPERSEDES: December 11, 1990

PURPOSE

To provide a policy for determining the number of bedrooms or bedroom equivalents when evaluating onsite sewage disposal system designs.

AUTHORITY

Ventura County Building Code  
Uniform Plumbing Code

POLICY

All rooms with the exception of "Core rooms" as defined below, shall be considered bedrooms or bedroom equivalents when determining septic tank capacities and absorption field areas for development requiring onsite sewage disposal. To ensure compliance with this policy, detailed floor plans and plumbing fixture plans must be submitted with applications for new individual sewage disposal systems, applications to certify existing disposal systems, and for various land use projects.

DEFINITIONS

Core Room: A room typically found in a single-family dwelling generally recognized as being a kitchen, living room, bathroom, utility room, dining room, and family room.

Bedroom: Any room not identified as a core room.

Family Room: A room with an unobstructed opening into a living room, dining room, or kitchen, or a room where at least one-half of the area of the common wall is open and unobstructed.

Utility Room: A room containing clothes washing and drying appliances, utility sink (mop sink), space for storage of household supplies and other similar uses.

VENTURA COUNTY  
PUBLIC WORKS AGENCY  
PUMP & RECOVERY TEST  
FOR WATER WELLS

I. Well Owner Information

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone: ( ) \_\_\_\_\_

II. Driller/Consultant Information (person who performs or oversees test).

Name: \_\_\_\_\_  
Company Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone: ( ) \_\_\_\_\_

- |   |   |
|---|---|
| <input type="checkbox"/> C-57 Driller                     | <input type="checkbox"/> Registered Geologist |
| <input type="checkbox"/> Registered Engineering Geologist | <input type="checkbox"/> Registered Engineer  |
| <input type="checkbox"/> Pump Contractor                  |   |

License Number: \_\_\_\_\_ Expiration Date: \_\_\_\_\_  
Name of person actually performing test: \_\_\_\_\_

III. Well Data:

County Well Permit Number (if drilled after 1970): \_\_\_\_\_  
State Well Number (if known): \_\_\_\_\_

0 Date Drilled: \_\_\_\_\_ Driller's Name: \_\_\_\_\_  
Depth of Well: \_\_\_\_\_ Casing Diameter: \_\_\_\_\_  
Casing Perforations (feet): \_\_\_\_\_

Location of well (if different from owner's above also attached map showing location of well and property relative to public roads or other landmarks):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

IV. Test Method:

Pumping Method

- Owner's existing turbine pump
  - Installed temporary turbine pump
  - Owner's existing submersible pump
  - Installed temporary submersible pump
- Horsepower of pump: \_\_\_\_\_

Water Level Measuring Method

- Tape measurement (kind: \_\_\_\_\_)
- Acoustic sounder (kind: \_\_\_\_\_)
- Electrical (conductivity) sounder (kind: \_\_\_\_\_)
- Air line (set at \_\_\_\_\_ feet of depth)

Flow Measuring Method

Pump set at \_\_\_\_\_ feet of depth.  
How was flow rate (gpm) measured?: \_\_\_\_\_

Diameter of discharge pipe: \_\_\_\_\_  
Was flow measured directly from pump discharge line or from another point (such as pressure tank, faucet at house, etc.)? \_\_\_\_\_

Was discharge line "throttled down" or pump speed altered? \_\_\_\_\_

Dates of Test

Date that test began: (Day/Month/Year): \_\_\_\_\_  
Date that test ended: (Day/Month/Year): \_\_\_\_\_

**V. Pump Test Data**

Total Elapsed Time	Clock Time (AM/PM) (Hrs/Min)	Depth-to-Water Meas. (ft.) <u>(Static Level)</u>	Drawdown from Start Level (ft.) ∅	Rate of Discharge in GPM ∅	Comments or Changes in Methods Static Water Level Start Pump
0 (Start Time)	_____	_____	_____	_____	_____

(Measure every minute until 10 minutes elapsed time).

1 minute	_____	_____	_____	_____	_____
2 minutes	_____	_____	_____	_____	_____
3 minutes	_____	_____	_____	_____	_____
4 minutes	_____	_____	_____	_____	_____
5 minutes	_____	_____	_____	_____	_____
6 minutes	_____	_____	_____	_____	_____
7 minutes	_____	_____	_____	_____	_____
8 minutes	_____	_____	_____	_____	_____
9 minutes	_____	_____	_____	_____	_____
10 minutes	_____	_____	_____	_____	_____

(Measure every five minutes until 45 minutes elapsed time).

15 minutes	_____	_____	_____	_____	_____
20 minutes	_____	_____	_____	_____	_____
25 minutes	_____	_____	_____	_____	_____
30 minutes	_____	_____	_____	_____	_____
35 minutes	_____	_____	_____	_____	_____
40 minutes	_____	_____	_____	_____	_____
45 minutes	_____	_____	_____	_____	_____

(Measure every 15 minutes until 90 minutes elapsed time).

60 minutes	_____	_____	_____	_____	_____
75 minutes	_____	_____	_____	_____	_____
90 minutes	_____	_____	_____	_____	_____

(Measure every 30 minutes until 180 minutes elapsed time).

120 minutes (2 hrs.)	_____	_____	_____	_____	_____
150 minutes	_____	_____	_____	_____	_____
180 minutes (3 hrs.)	_____	_____	_____	_____	_____

(Measure every hour until 24 hours elapsed time).

4 hours	_____	_____	_____	_____	_____
5 hours	_____	_____	_____	_____	_____
6 hours	_____	_____	_____	_____	_____
7 hours	_____	_____	_____	_____	_____
8 hours	_____	_____	_____	_____	_____
9 hours	_____	_____	_____	_____	_____
10 hours	_____	_____	_____	_____	_____
11 hours	_____	_____	_____	_____	_____
12 hours	_____	_____	_____	_____	_____
13 hours	_____	_____	_____	_____	_____
14 hours	_____	_____	_____	_____	_____
15 hours	_____	_____	_____	_____	_____
16 hours	_____	_____	_____	_____	_____
17 hours	_____	_____	_____	_____	_____
18 hours	_____	_____	_____	_____	_____
19 hours	_____	_____	_____	_____	_____

20 hours	_____	_____	_____	_____	_____
21 hours	_____	_____	_____	_____	_____
22 hours	_____	_____	_____	_____	_____
23 hours	_____	_____	_____	_____	_____
24 hours	_____	_____	_____	_____	_____

**VI. Recovery Test Data:** Begin Recovery Test one minute after completion of Pump Test

Total Elapsed Time	Clock Time (AM/PM) (Hrs/Min)	Depth-to-Water Meas. (ft.)	Residual Drawdown* (ft.)	Comments
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\*Recovery: Calculate distance from lowest pumping drawdown level back to starting static level.

(Measure every minute from immediate end of 24 hour pumping test until 10 minutes elapsed time)

1 minute	_____	_____	_____	_____
2 minutes	_____	_____	_____	_____
3 minutes	_____	_____	_____	_____
4 minutes	_____	_____	_____	_____
5 minutes	_____	_____	_____	_____
6 minutes	_____	_____	_____	_____
7 minutes	_____	_____	_____	_____
8 minutes	_____	_____	_____	_____
9 minutes	_____	_____	_____	_____
10 minutes	_____	_____	_____	_____

(Measure every five minutes until 45 minutes elapsed time)

15 minutes	_____	_____	_____	_____
20 minutes	_____	_____	_____	_____
25 minutes	_____	_____	_____	_____
30 minutes	_____	_____	_____	_____
35 minutes	_____	_____	_____	_____
40 minutes	_____	_____	_____	_____
45 minutes	_____	_____	_____	_____

(Measure every 15 minutes until 90 minutes elapsed time)

60 minutes	_____	_____	_____	_____
75 minutes	_____	_____	_____	_____
90 minutes	_____	_____	_____	_____

(Measure every 30 minutes until 180 minutes elapsed time)

120 minutes	_____	_____	_____	_____
150 minutes	_____	_____	_____	_____
180 minutes	_____	_____	_____	_____

(Measure every hour until 24 hours elapsed time)

4 hours	_____	_____	_____	_____
5 hours	_____	_____	_____	_____
6 hours	_____	_____	_____	_____
7 hours	_____	_____	_____	_____
8 hours	_____	_____	_____	_____
9 hours	_____	_____	_____	_____
10 hours	_____	_____	_____	_____
11 hours	_____	_____	_____	_____
12 hours	_____	_____	_____	_____
13 hours	_____	_____	_____	_____
14 hours	_____	_____	_____	_____
15 hours	_____	_____	_____	_____

16 hours	_____	_____	_____	_____
17 hours	_____	_____	_____	_____
18 hours	_____	_____	_____	_____
19 hours	_____	_____	_____	_____
20 hours	_____	_____	_____	_____
21 hours	_____	_____	_____	_____
22 hours	_____	_____	_____	_____
23 hours	_____	_____	_____	_____
24 hours	_____	_____	_____	_____

-End of Test-

I certify that the above test was performed as shown above under my supervision and the data entered hereon is true and accurate for the dates tested

Signature: \_\_\_\_\_ License No. \_\_\_\_\_ Date: \_\_\_\_\_