



# Humboldt County Department of Health and Human Services

## DIVISION OF ENVIRONMENTAL HEALTH

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### WATER PRODUCTION TEST PROCEDURES

#### Introduction

The County of Humboldt has adopted the following policies which apply to individual water supplies serving 1 to 4 service connections for proposed subdivision, individual residences in the coastal zone, and development requiring a conditional/or special-use permit where proof of water is needed. These policies are intended to assure that development is consistent with the limitations of the local water supply.

#### General

- Water production tests for springs and streams must be conducted by a Licensed Well Driller, Licensed Land Surveyor, Registered Civil Engineer, or Registered Geologist. Well production tests must be conducted by a Licensed Well Driller, Registered Civil Engineer, or Registered Geologist. Other qualified consultants may conduct water production tests if they obtain prior written approval from the Division of Environmental Health.
- All water production tests must be conducted during the dry season and be representative of the lowest annual water production anticipated from the source. The dry season testing period is **August 1 through September 30**. The period may be modified, extended, or terminated by the Division of Environmental Health during periods of unusual rainfall.
- The Division of Environmental Health may waive or modify the dry season testing requirement on a case-by-case basis where adequate documentation is presented. The dry season testing may also be waived for large streams and rivers with documented year-round flows.
- Water production testing must be conducted in conformance with the procedures detailed in this policy. Alternative testing procedures may be utilized if they yield equivalent results and are approved in writing by the Division of Environmental Health prior to the test.
- Requests for waivers, modifications, or alternative testing procedures must be submitted in writing with appropriate supporting information.

#### Water Quantity

1. For individual residences the minimum required water supply per residence from the source shall be 0.5 gal./min. where supplemented with a drinking water storage capacity of 1,500 gallons or more. Without this storage capacity the minimum water supply shall be 1.0 gal./min. In no case will a supply of less than 0.5 gal./min. be considered acceptable for individual residences.

- Water requirements for commercial, institutional, and industrial facilities shall be established by the Division of Environmental Health individually for each project, based upon usage rates for comparable facilities within the region, and consideration of standards of practice for water supply planning and engineering.

**Streams and Springs: Cases Where Water Overflows the Collection Facility**

- The object of the test is to measure water production, not water stored in the collection facility.
- The water tester shall measure the time required to fill a container of a known volume. At least three measurements must be made. If the rates vary considerably (by more than 33 percent), then several more measurements must be taken. The average of observations shall be considered the production rate.
- Spring testing must be performed between August 1 and September 30 (unless this period is extended).

**Wells and Springs: Cases Where Water Must Be Pumped from the Collection Facilities**

The pump shall be set at the depth of the lowest producing zone of the spring or well and pumped at the pump design rate until the pump breaks suction. If the pump does not break suction for a period of 12 hours, then the drawdown portion of the test may be terminated and the recovery measurements observed. This will complete a 12-hour constant rate pump test. All measurements shall be made according to the schedule below. The pumping rate established after drawdown has stabilized shall be considered the well's production rate.

If the pump breaks suction, the pumping rate shall be slowly decreased until the pumping level stabilizes approximately 2 feet above the pump intake for a period of not less than 5 minutes. The pumping rate shall then be decreased 5 percent and the well pumped at this rate until the drawdown stabilizes for one hour. The discharge rate and drawdown thus established shall be maintained until the total test duration is a minimum of 12 hours. This pumping rate shall be considered the available production rate of the well.

The static or non-pumping water level shall be established prior to the start of the test. For existing wells it may be necessary to prohibit pumping 12 to 24 hours prior to beginning the test.

Drawdown shall be measured according to the following schedule:

0 to 10 minutes	Measure every minute
10 to 45 minutes	Measure every 5 minutes
45 to 90 minutes	Measure every 15 minutes
90 to 180 minutes	Measure every 30 minutes
180 to end of test	Measure every hour

Should the measurements not be made exactly at the time specified, the actual time of each measurement shall be recorded.

On completion of pumping, recovery measurements shall be made according to the above drawdown schedule until the well has recovered to at least 95 percent of the original static level, or when several measurements are taken at one-hour intervals that show less than a 0.1 foot difference.

The recovery period is to be compared to the drawdown period of the pump test. Wells exhibiting poor recovery (longer than 12 hours) or slow recovery (longer than the drawdown time) will not be credited the full stabilized pumping rate for the production rate and may require additional testing and certification by a Registered Civil Engineer or Geologist.

All measurements shall be recorded and reported with the highest degree of accuracy. All data and information pertinent to the project shall be submitted on a form prepared by or approved by the Division of Environmental Health

Drawdown levels of surrounding wells may also be required, especially in areas which are densely populated, or where water shortages are known to occur.

In some regions it may be acceptable to complete a pump test of only 4 hours after the discharge rate and drawdown have stabilized for an hour. This will be determined by the Division of Environmental Health prior to testing on a case-by-case basis where adequate documentation exists.

(Aquifer Test Data Form attached; copy as needed)