

CALIFORNIA CODE OF REGULATIONS, Title 22, §64554

22 CCR § 64554

Cal. Admin. Code tit. 22, § 64554

BARCLAYS OFFICIAL CALIFORNIA CODE OF REGULATIONS
TITLE 22. SOCIAL SECURITY
DIVISION 4. ENVIRONMENTAL HEALTH
CHAPTER 16. CALIFORNIA WATERWORKS STANDARDS
ARTICLE 2. PERMIT REQUIREMENTS
This database is current through 12/12/08, Register 2008, No. 50

§ 64554. New and Existing Source Capacity.

(a) At all times, a public water system's water source(s) shall have the capacity to meet the system's maximum day demand (MDD). MDD shall be determined pursuant to subsection (b).

(1) For systems with 1,000 or more service connections, the system shall be able to meet four hours of peak hourly demand (PHD) with source capacity, storage capacity, and/or emergency source connections:

(2) For systems with less than 1,000 service connections, the system shall have storage capacity equal to or greater than MDD, unless the system can demonstrate that it has an additional source of supply or has an emergency source connection that can meet the MDD requirement.

(3) Both the MDD and PHD requirements shall be met in the system as a whole and in each individual pressure zone.

(b) A system shall estimate MDD and PHD for the water system as a whole (total source capacity and number of service connections) and for each pressure zone within the system (total water supply available from the water sources and interzonal transfers directly supplying the zone and number of service connections within the zone), as follows:

(1) If daily water usage data are available, identify the day with the highest usage during the past ten years to obtain MDD; determine the average hourly flow during MDD and multiply by a peaking factor of at least 1.5 to obtain the PHD.

(2) If no daily water usage data are available and monthly water usage data are available:

(A) Identify the month with the highest water usage (maximum month) during at least the most recent ten years of operation or, if the system has been operating for less than ten years, during its period of operation;

(B) To calculate average daily usage during maximum month, divide the total water usage during the maximum month by the number of days in that month; and

(C) To calculate the MDD, multiply the average daily usage by a peaking factor that is a minimum of 1.5; and

(D) To calculate the PHD, determine the average hourly flow during MDD and multiply by a peaking factor that is a minimum of 1.5.

(3) If only annual water usage data are available:

(A) Identify the year with the highest water usage during at least the most recent ten years of operation or, if the system has been operating for less than ten years, during its years of operation;

(B) To calculate the average daily use, divide the total annual water usage for the year with the highest use by 365 days; and

(C) To calculate the MDD, multiply the average daily usage by a peaking factor of 2.25.

(D) To calculate the PHD, determine the average hourly flow during MDD and multiply by a peaking factor that is a minimum of 1.5.

(4) If no water usage data are available, utilize records from a system that is similar in size, elevation, climate, demography, residential property size, and metering to determine the average water usage per service connection. From the average water usage per service connection, calculate the average daily demand and follow the steps in paragraph (3) to calculate the MDD and PHD.

(c) Community water systems using only groundwater shall have a minimum of two approved sources before being granted an initial permit. The system shall be capable of meeting MDD with the highest-capacity source off line.

(d) A public water system shall determine the total capacity of its groundwater sources by summing the capacity of its individual active sources. If a source is influenced by concurrent operation of another source, the total capacity shall be reduced to account for such influence. Where the capacity of a source varies seasonally, it shall be determined at the time of MDD.

(e) The capacity of a well shall be determined from pumping data existing prior to March 9, 2008 or in accordance with subsection (f) or (g). Prior to conducting a well capacity test pursuant to subsection (g), a system shall submit the information listed below to the Department for review and approval. For well capacity tests conducted pursuant to subsection (f), the information shall be submitted to the Department if requested by the Department.

(1) The name and qualifications of the person who will be conducting the test;

(2) The proposed test's pump discharge rate, based on the design rate determined during well development and/or a step-drawdown test.

(3) A copy of a United States Geological Survey 7 1/2-minute topographic map of the site at a scale of 1:24,000 or larger (1 inch equals 2,000 feet or 1 inch equals less than 2,000 feet) or, if necessary, a site sketch at a scale providing more detail, that clearly indicates;

(A) The well discharge location(s) during the test, and

(B) The location of surface waters, water staff gauges, and other production wells within a radius of 1000 feet;

(4) A well construction drawing, geologic log, and electric log, if available;

- (5) Dates of well completion and well development, if known;
 - (6) Specifications for the pump that will be used for the test and the depth at which it will draw water from the well;
 - (7) A description of the methods and equipment that will be used to measure and maintain a constant pumping rate;
 - (8) A description of the water level measurement method and measurement schedule;
 - (9) For wells located in or having an influence on the aquifer from which the new well will draw water, a description of the wells' operating schedules and the estimated amount of groundwater to be extracted, while the new well is tested and during normal operations prior to and after the new well is in operation;
 - (10) A description of the surface waters, water staff gauges, and production wells-shown in (3)(B);
 - (11) A description of how the well discharge will be managed to ensure the discharge doesn't interfere with the test;
 - (12) A description of how the initial volume of water in the well's casing, or bore hole if there is no casing at the time, will be addressed to ensure it has no impact on the test results; and
 - (13) A written description of the aquifer's annual recharge.
- (f) To determine the capacity of a well drilled in alluvial soils when there is no existing data to determine the capacity, a water system shall complete a constant discharge (pumping rate) well capacity test and determine the capacity as follows:
- (1) Take an initial water level measurement (static water level) and then pump the well continuously for a minimum of eight hours, maintaining the pump discharge rate proposed in subsection (e)(2);
 - (2) While pumping the well, take measurements of the water level drawdown and pump discharge rates for a minimum of eight hours at a frequency no less than every hour;
 - (3) Plot the drawdown data versus the time data on semi-logarithmic graph paper, with the time intervals on the horizontal logarithm axis and the drawdown data on the vertical axis;
 - (4) Steady-state is indicated if the last four hours of drawdown measurements and the elapsed time yield a straight line in the plot developed pursuant to subsection (3). If steady-state is not achieved, the pump discharge rate shall be continued for a longer period of time or adjusted, with paragraphs (2) and (3) above repeated, until steady-state is achieved.
 - (5) Discontinue pumping and take measurements of the water level drawdown no less frequently than every 15 minutes for the first two hours and every hour thereafter for at least six hours or until the test is complete; and
 - (6) To complete the test, the well shall demonstrate that, within a length of time not exceeding the duration of the pumping time of the well capacity test, the water level has recovered to within two feet of the static water level measured at the beginning of the

test or to a minimum of ninety-five percent of the total drawdown measured during the test, whichever is more stringent.

(7) The capacity of the well shall be the pump discharge rate determined by a completed test.

(g) The capacity of a well whose primary production is from a bedrock formation, such that the water produced is yielded by secondary permeability features (e.g. fractures or cracks), shall be determined pursuant to either paragraph (1) or (2) below.

(1) The public water system shall submit a report, for Department review and approval, proposing a well capacity based on well tests and the evaluation and management of the aquifer from which the well draws water. The report shall be prepared and signed by a California registered geologist with at least three years of experience with groundwater hydrology, a California licensed engineer with at least five years of experience with groundwater hydrology, or a California certified hydrogeologist. Acceptance of the proposed well capacity by the Department shall, at a minimum, be based on the Department's review and approval of the following information presented in the report in support of the proposed well capacity:

(A) The rationale for the selected well test method and the results;

(B) The geological environment of the well;

(C) The historical use of the aquifer;

(D) Data from monitoring of other local wells;

(E) A description of the health risks of contaminants identified in a Source Water Assessment, as defined in section 63000.84 of Title 22, and the likelihood of such contaminants being present in the well's discharge;

(F) Impacts on the quantity and quality of the groundwater;

(G) How adjustments were made to the estimated capacity based on drawdown, length of the well test, results of the wells test, discharge options, and seasonal variations and expected use of the well; and

(H) The well test(s) results and capacity analysis.

(2) During the months of August, September, or October, conduct either a 72- hour well capacity test or a 10-day well capacity test, and determine the well capacity using the following procedures:

(A) Procedures for a 72 hour well capacity test:

1. For the purpose of obtaining an accurate static water level value, at least twelve hours before initiating step 2., pump the well at the pump discharge rate proposed in subsection (e)(2) for no more than two hours, then discontinue pumping;

2. Measure and record the static water level and then pump the well continuously for a minimum of 72 hours starting at the pump discharge rate proposed in (e)(2);

3. Measure and record water drawdown levels and pump discharge rate:

a. Every thirty minutes during the first four hours of pumping,

- b. Every hour for the next four hours, and
 - c. Every four hours thereafter until the water drawdown level is constant for at least the last four remaining measurements, and;
4. Plot the drawdown and pump discharge rate data versus time data on semi-logarithmic graph paper, with the time intervals on the horizontal logarithmic axis and the drawdown and pump discharge rate data on the vertical axis.

(B) Procedures for a 10 day well capacity test:

1. For the purpose of obtaining an accurate static water level value, at least twelve hours before initiating step 2., pump the well at the pump discharge rate proposed in subsection (e)(2) for no more than two hours, then discontinue pumping;
2. Measure and record the static water level and then pump the well continuously for a minimum of 10 days starting at the pump discharge rate proposed in (e)(2);
3. Measure and record water drawdown levels and pumping rate:
 - a. Every thirty minutes during the first four hours of pumping,
 - b. Every hour for the next four hours,
 - c. Every eight hours for the remainder of the first four days,
 - d. Every 24 hours for the next five days, and
 - e. Every four hours thereafter until the water drawdown level is constant for at least the last four remaining measurements, and;
4. Plot the drawdown and pump discharge rate data versus time data on semi-logarithmic graph paper, with the time intervals on the horizontal logarithmic axis and the drawdown and pump discharge rate data on the vertical axis.

(C) To complete either the 72-hour or 10-day well capacity test the well shall demonstrate that, within a length of time not exceeding the duration of the pumping time of the well capacity test, the water level has recovered to within two feet of the static water level measured at the beginning of the well capacity test or to a minimum of ninety-five percent of the total drawdown measured during the test, whichever is more stringent. If the well recovery does not meet these criteria, the well capacity cannot be determined pursuant to subsection (g)(2) using the proposed pump rate. To demonstrate meeting the recovery criteria, the following water level data in the well shall be measured, recorded, and compared with the criteria:

1. Every 30 minutes during the first four hours after pumping stops,
2. Hourly for the next eight hours, and
3. Every 12 hours until either the water level in the well recovers to within two feet of the static water level measured at the beginning of the well capacity test or to a at least ninety-five percent of the total drawdown measured during the test, which ever occurs first.

(D) Following completion of a 72-hour or 10-day well capacity test, the well shall be assigned a capacity no more than:

1. For a 72-hour test, 25 percent of the pumping rate at the end of a completed test's pumping.
2. For a 10-day test, 50 percent of the pumping rate at the end a completed test's pumping.

(h) The public water system shall submit a report to the Department that includes all data and observations associated with a well capacity test conducted pursuant to subsection (f) or (g), as well as the estimated capacity determination methods and calculations. The data collected during pumping and recovery phases of the well capacity tests shall be submitted in an electronic spreadsheet format in both tabular and graphic files.

(i) An assigned well capacity may be revised by the Department if pumping data collected during normal operations indicates that the assigned well capacity was not representative of the actual well capacity.

(j) If directed by the Department to do so, based on adverse conditions that may lead or may have led to a regional aquifer's inability to meet a water system's demand on such an aquifer, the water system shall submit a report to the Department that includes regional aquifer recharge estimates and a water balance analysis. The report shall be prepared and signed by a California registered geologist with at least three years of experience with groundwater hydrology, a California licensed engineer with at least five years of experience with groundwater hydrology, or a California certified hydrogeologist.

(k) The source capacity of a surface water supply or a spring shall be the lowest anticipated daily yield based on adequately supported and documented data.

(l) The source capacity of a purchased water connection between two public water systems shall be included in the total source capacity of the purchaser if the purchaser has sufficient storage or standby source capacity to meet user requirements during reasonable foreseeable shutdowns by the supplier.

Note: Authority cited: Sections 116350, 116375 and 131200, Health and Safety Code.
Reference: Sections 116275, 116375, 116540, 116555 and 131051, Health and Safety Code.

HISTORY

1. New section filed 2-8-2008; operative 3-9-2008 (Register 2008, No. 6).

22 CCR § 64554, 22 CA ADC § 64554
1CAC

22 CA ADC § 64554

END OF DOCUMENT