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California Code of Regulations
Title 23. Waters
Division 2. Department of Water Resources
Chapter 5.1. Water Conservation Act of 2009
Article 2. Agricultural Water Measurement

§597.1. Applicability

a) An agricultural water supplier subject to this article shall measure surface water and groundwater that it delivers to its customers, excluding recycled water, pursuant to the accuracy standards in this article.

i) A water supplier providing water to wildlife refuges or habitat lands where (1) the refuges or habitat lands are under a contractual relationship with the water supplier, and (2) the water supplier meets the irrigated acreage criteria of §10608.12(a), is subject to this article.

Note: Authority cited: §10828. Water Code.

§597.2. Definitions

(a) For purposes of this article, the terms used are defined in this section.

2) "Agricultural water supplier," as defined in Water Code §10608.12(a), means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding acres that receive only recycled water. "Agricultural water supplier" includes a supplier or contractor for water, regardless of the basis of right, that distributes or sells water for ultimate resale to customers. "Agricultural water supplier" does not include the Department of Water Resources.

1)

10) "Manufactured device" means a device that is manufactured by a commercial enterprise, often under exclusive legal rights of the manufacturer, for direct off-the-shelf purchase and installation. Such devices are capable of directly measuring flow rate, velocity, or totalizing [is "totalizing" a word?] the volume of water delivered, without the need for additional components that are built on-site or in-house.

11) "Measurement device" means a device by which an agricultural water supplier determines the numeric value of flow rate, velocity or volume of the water passing a designated delivery point. A measurement device may include a manufactured device~~s~~, on-site built device~~s~~, or in-house built device~~s~~.

13) "Recycled water" is defined in subdivision (n) of §13050 of the Water Code as water, which as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur, and is therefore considered a valuable resource.

14) "Type of Device" means a measurement devices that is are manufactured or built to perform a similar function. For example, a rectangular, v-notch, broad--crested weirs are is one type of device. Similarly, all Parshall flumes are considered one type of device.

§597.3 Range of Options for Agricultural Water Measurement

An agricultural water supplier subject to this article may choose any single option or combination of options listed in paragraphs (a) and (b) of this section. Measurement devices shall be certified pursuant to §597.4 of this article.

a) Options Applicable to Measurement at the Locations of Transfer to Delivery Point of a Customer:

An Aagricultural water suppliers shall measure water delivered to each customer delivery point using one of the following:

1) A Mmeasurement devices installed after the effective date of this article and using a laboratory certification shall be certified to be accurate to at least within ±5% by flow rate, velocity or volume, in the laboratory.

Or,

2) A Mmeasurement devices installed after the effective date of this article and using non-laboratory certification, which shall be certify it ied to be accurate to at least within ±10% by flow rate, velocity, or volume, when installed in field.

Or,

3) A Mmeasurement devices installed prior to the effective date of this article that are is certified to be accurate to at least within ±12% by flow rate, velocity, or volume. After replacement of an existing measurement device, the new or replacement measurement device must meet the requirements of paragraphs (a)(1) or (a)(2) of this section.

b) Options Applicable to Measurement Upstream of the Locations of the Delivery Points of Multiple Customers

An Aagricultural water suppliers shall measure water delivered to each measurement location upstream of more than one customer delivery points using one of the following:

1) A Mmeasurement devices installed after the effective date of this article that has using a laboratory certification that shall be certifiesd it to be accurate to at least within within ±3% by flow rate, velocity or volume, in the laboratory.

Or,

2) A Mmeasurement devices installed after the effective date of this article that has using non-laboratory certification, shall be that certifiesd it to be accurate to at least within ±6% by flow rate, velocity, or volume when installed in field.

Or,

3) A Mmeasurement devices installed prior to the effective date of this article that are is certified to be accurate to at least within ±10% by flow rate, velocity, or volume. After replacement of an existing measurement device, the new or replacement

measurement device must meet the requirements of paragraphs (b)(1) or (b)(2) of this section.

An agricultural water supplier choosing an option under paragraph (b) shall provide documentation in its Agricultural Water Management Plan(s) submitted pursuant to Water Code §10826 of (A) and (B) as follows:

A) Its ~~C~~customer delivery points meet any one of the following qualifications:

(i) The agricultural water supplier does not have legal access to the customer delivery point to install, measure, maintain, operate, and monitor the measurement device, or;

(ii) The agricultural water supplier has determined~~s~~ that the flow rate or velocity through a customer delivery point varies during the calendar year, either due to crop agronomic requirements or the capabilities of the supplier's distribution system, such that no single measurement device is capable of meeting the accuracy standards under §597.3(a) for the year as a whole, or;

(iii) The agricultural water supplier has determined~~s~~ that it is not technically feasible to measure and meet the accuracy standard of 597.3(a), where the finding of technical infeasibility has been reviewed and certified by a registered Professional Engineer.

And,

B) The methodology the agricultural water supplier uses to apportion the quantities of water delivered to individual customers must meet all of the following criteria:

(i) It must a~~A~~ccount for differences in water use among individual customers, using information that shall include the recording of the time at which each individual customer's delivery starts and ends, and that may also include, but is not limited to, the irrigated acreage, crop, and on-farm irrigation systems, and account for variances in a customer's use throughout the year, and;

(ii) It must ~~B~~be adequate for establishing a pricing structure for water customers based at least in part on quantity delivered, and;

(iii) It must ~~B~~be formally approved by the supplier's governing body (e.g., Board of Directors).

Note: Authority cited: §10608.48, Water Code. Reference: §10608, Water Code.

§597.4 Certification and Performance Requirements of Measurement Devices

a) Certification Requirements- Certification of an individual device or type of device as required in §597.3 shall be conducted and documented by any of the following:

i) Laboratory Certification – testing shall ~~will~~ be performed by an entity, institution, or individual that ~~has~~ is ~~obtained~~ certifi~~ed~~cation ~~from~~ by an appropriate organization~~s~~ or accrediting institution~~s~~, or follow~~s~~ industry ~~–~~established protocols such as the National Institute for Standards and Testing (NIST) traceability standards. The results of laboratory testing shall be provided to the agricultural supplier in (1) manufacture~~r~~'s literature referencing the laboratory testing, or (2) laboratory reports documenting the testing results for the specific device or installation.

ii) Non-Laboratory Certification – certification may occur through either:
(1) approval by a registered Professional Engineer of ~~shall approve~~ either (a) the design and installation of ~~an~~ the individual device at a specified location, or (b) use of a standardized design and installation for a group of measurement devices constructed at various locations,

Or,

(2) an in-field test performed on a measurement device ~~once~~ installed by individuals trained in the use of field testing equipment, where the results are reviewed and certified by a registered Professional Engineer.

The results shall be provided to the agricultural water supplier as (1) a notice of the accuracy stamped and signed by the Professional Engineer, or (2) results of the field test as stamped and signed by the Professional Engineer.

iii)

b) Performance Requirements- All measurement devices~~,~~ shall be correctly installed, maintained, operated, inspected, and monitored as described by the manufacturer~~,~~ or the laboratory~~ies~~ or individual~~s~~ certifying the device and pursuant to best professional practices. Water measurement device testing protocols and frequency of testing shall be according to manufacture~~r~~'s or design specifications and following best professional practices.

If, as part of an agricultural water supplier's maintenance and operations protocols, an installed device is determined by the agricultural supplier to no longer meet the performance requirements of ~~in~~ §597.3(a) or §597.3(b), then the agricultural water supplier shall take appropriate corrective action, including, but not limited to, repair or replacement to achieve the requirements of this article.

Records ~~to~~ documenting compliance with the requirements in §597.3 shall be maintained by the agricultural water supplier for not less than ~~at least~~ 10 years. The records shall include at a minimum: documentation of certification for an individual device or type of device as necessary to indicate compliance with §597.3, and additional device-specific

data where warranted, including dates of inspections, maintenance, repairs, calibrations, and adjustments to the measurement device.

§597.5 Demonstration of Certification and Performance

An ~~A~~agricultural water supplier subject to this article shall demonstrate the certification and performance of measurement devices by submitting documents as part of ~~in~~ its Agricultural Water Management Plan, pursuant to §597.4, as follows:

a) Submit documents demonstrating certification for each device or type of device for all devices or device types not previously reported in a prior Agricultural Water Management Plan.

b) For in-field testing, submit the methodology for sampling and testing, the summary of testing results, and the documentation of protocols to address actions taken to resolve devices identified as not meeting the accuracy criteria pursuant to §597.3.

c) A description of best professional practices associated with the (1) collection of measured data and method of determining irrigated acres, (2) data quality control, and (3), for devices measuring flow rate or velocity, methods for determining volumetric quantities.

   i) For devices that measure flow-rate, the documentation shall ~~will~~ demonstrate protocols associated with the measurement of the duration of delivery, where volume is derived by the following formula: Volume = flow rate x duration of delivery.

   ~~i)~~ii) For devices that measure velocity only, the documentation shall ~~will~~ demonstrate protocols associated with the measurement of the cross-section of flow and duration of delivery, where volume is derived by the following formula: Volume = velocity x cross-section flow area x duration of flow.

   ~~i)~~iii) For devices that measure water elevation at the device (e.g. flow over a weir or differential elevation on either side of a device), the documentation will demonstrate protocols associated with the measurement of elevation where elevation is used to derive flow rate at the device. The documentation will further demonstrate protocols used to derive volume from the elevation values.

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