

MEMORANDUM

MAY 18, 2011

TO: California Water Commission

FROM: Bob Reeb, Executive Director 
Valley Ag Water Coalition

SUBJECT: Item No. 7—Agricultural Water Measurement Regulations

The Valley Ag Water Coalition is a lobbying coalition formed in 2006 that represents 40 water companies and public agencies that deliver agricultural water supplies in the San Joaquin Valley.

Chris M. Kapheim, General Manager, Alta Irrigation District is a member of the Valley Ag Water Coalition Steering Committee and participated on the Agricultural Stakeholders Committee that worked with the Department of Water Resources in preparing the draft regulations before the Commission today.

The Valley Ag Water Coalition respectfully requests the following amendments to the Agricultural Water Measurement Regulations developed under SB7X-7, Water Conservation Bill of 2009 [dated Wednesday, May 18, 2011]:

1. Range of Options for Agricultural Water Measurement

Amend Section 597.3, to read:

§597.3 Range of Options for Agricultural Water Measurement

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 section. The supplier may choose any applicable single measurement option or combination of options listed in paragraphs (a) and (b) of this section. Measurement device accuracy and operation shall be certified, tested, inspected and/or analyzed as described in §597.4 of this article.

a) Measurement Options at the Delivery Point or Farm-gate of a Single Customer:

An agricultural water supplier shall measure water delivered at the delivery point or farm-gate of a single customer using one of the following measurement options:

1) An existing measurement device shall be certified to be accurate to within $\pm 12\%$ by flow rate, velocity or volume. After replacement of an existing measurement device, the

new or replacement measurement device must meet the requirements of paragraph (a)(2) of this section.

Or,

2) A new or replacement measurement device shall be certified to be accurate by flow rate, velocity or volume to within:

A. $\pm 5\%$ in the laboratory when using a laboratory certification;

B. $\pm 10\%$ when installed in the field when using a non-laboratory certification.

b) Measurement Options at a Location Upstream of the Delivery Points or Farm-gates of Multiple Customers:

1) An agricultural water supplier that meets the provisions of paragraph (b)(2) of this section may measure water delivered at a location upstream of the delivery points or farm-gates of multiple customers using one of the following measurement options:

A) An existing measurement device shall be certified to be accurate to within $\pm 10\%$ $\pm 12\%$ 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 (b)(1)(B) of this section.

Or,

B) A new or replacement measurement device shall be certified to be accurate by flow rate, velocity or volume to within:

(i) $\pm 3\%$ $\pm 5\%$ in the laboratory when using a laboratory certification;

(ii) $\pm 6\%$ $\pm 10\%$ when installed in field when using a non-laboratory certification.

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

A) The downstream customer delivery points or farm-gates shall meet any one of the following two conditions:

(i) The agricultural water supplier does not have legal access to the customer delivery points or farm-gates downstream of the point of measurement to install, measure, maintain, operate, and monitor the measurement device.

Or,

(ii) The agricultural water supplier has determined, and approved by an engineer, that the applicable accuracy standard of §597.3(a) cannot be met with a single measurement device at the individual downstream customer delivery points or farm-gates due to large fluctuations in flow rate or velocity during the irrigation season; for

example during rice cultivation, and provided the large fluctuations condition is applicable to all customers' irrigated areas downstream of the identified measurement location to multiple customers.

And,

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

(i) Account for differences in water use among the individual customers based on but not limited to the duration of water delivery to the individual customers, annual customer water use patterns, irrigated acreage, crops planted, and on-farm irrigation system,

and;

(ii) Sufficient for establishing a pricing structure based at least in part on the volume delivered,
and;

(iii) Approved by the agricultural water supplier's governing body (e.g., Board of Directors).

c) Measurement Options for Agricultural Water Suppliers subject to Federal Statutes

An agricultural water supplier subject to either the Central Valley Project Improvement Act (Public Law 102-575), as it may be amended, or the Reclamation Reform Act of 1982, as it may be amended, or both, shall be deemed in compliance with this article if all irrigation water delivered by the water supplier to each customer is delivered through measurement devices that meet the United States Bureau of Reclamation accuracy standards defined in Reclamation's Conservation and Efficiency Criteria Standards of 2008, or as it may be amended.

2. Certification and Performance Requirements of Measurement Devices

Amend Section 597.4, to read:

a) Certification of Device Accuracy:

Certification of accuracy for an individual device or type of device, as required in §597.3, shall be documented by the following methods:

1) For existing measurement devices, the device accuracy as required in section 597.3(a)(1) shall be initially certified and documented by either:

~~A) A report documenting field testing that is completed on a random and statistically representative sample of the existing measurement devices as described in §597.4(b)(1) and (2), and approved by an engineer. Field testing shall be performed by individuals trained in the use of field testing equipment.~~

~~Or,~~

~~B) A report documenting field inspections and analysis that is completed for every existing measurement device as described in §597.4(b)(3), and approved by an engineer. Field inspections and analysis shall be performed by trained individuals.~~

~~2) For new or replacement measurement devices, the device accuracy as required in sections 597.3 (a)(2) and (b)(1)(B) shall be initially certified and documented by either:~~

~~A) Laboratory Certification prior to installation of a measurement device as documented by an entity, institution, or individual that tested the device following industry established protocols such as the National Institute for Standards and Testing (NIST) traceability standards. Documentation shall include the results of laboratory testing of an individual device or type of device.~~

~~Or,~~

~~B) Non-Laboratory Certification after installation of a measurement device, as documented by either:~~

~~(i) An an affidavit approved by an engineer of either (1) the design and installation of the individual device at a specified location, or (2) the standardized design and installation for a group of measurement devices, for each type of device installed at specified locations.~~

~~Or,~~

~~(ii) A report documenting in-field testing performed on the installed measurement device, or type of device, by individuals trained in the use of field testing equipment, and approved by an engineer.~~

~~3) For existing measurement devices covered by §597.3(b)(1)(A) (measurement at a location upstream of the delivery points or farm gates of multiple customers), field testing shall be completed on a random and statistically representative sample of the existing devices as described in §597.4(b)(1) and (2).~~

b) Protocols for Field-Testing and Field-Inspection and Analysis

~~1) If the device accuracy certification method described in §597.4(a)(1)(A) or 597.4(a)(2)(B)(ii) or 597.4(a)(3) is selected, field testing protocols shall be performed for a sample of existing measurement devices following best professional practices. It is~~

~~recommended the sample size be no less than 10% of existing devices, with a minimum of 5, and not to exceed approximately 100, individual devices for any particular device type. Alternatively, the supplier may develop its own sampling plan using an accepted statistical methodology.~~

~~2) If during the field testing of existing measurement devices, more than one-quarter of the samples for any particular device type do not meet the criteria pursuant to §597.3(a)(1), the agricultural water supplier shall provide, in its Agricultural Water Management Plan, a plan to test an additional 10% of its existing devices, with a minimum of 5, but not to exceed an additional 100 individual devices for the particular device type. This second round of field testing and corrective actions shall be completed within three years of the initial field testing sample.~~

~~3) If the device accuracy certification method described in §597.4(a)(1)(B) is selected, field inspections and analysis protocols shall be performed for every existing measurement device to demonstrate that the design and installation standards used for the installation of existing measurement devices are capable of meeting the requirements of §597.3(a)(1) and that existing operation and maintenance protocols meet best professional practices.~~

e) b) Records

1) Records documenting compliance with the requirements in §597.3 and §597.4 shall be maintained by the agricultural water supplier for two Agricultural Water Management Plan cycles.

2) The records shall include at a minimum: documentation of certification for an individual device or device type as necessary to show compliance with §597.3 and additional device-specific data where warranted, including dates of inspections, maintenance, repairs, calibrations and adjustments of measurement devices.

3) The results of laboratory testing used to demonstrate compliance with §597.3(a)(2)(A) or §597.3(b)(1)(B)(i) shall be provided to the agricultural water supplier in the form of either (1) manufacturer's literature referencing the laboratory testing, or (2) the actual laboratory reports documenting the testing results for the specific device or installation.

~~4) The results of field inspections and analysis shall be approved by an engineer and provided to the agricultural water supplier documenting the results for the specific device or installation as a notice of the accuracy.~~

d) c) Performance Requirements and Reporting

1) All measurement devices shall be correctly installed, maintained, operated, inspected, and monitored as described by the manufacturer, the laboratory or the registered Professional Engineer that has signed and stamped certification of the

device, and pursuant to best professional practices. Measurement device testing protocols shall be according to manufacturer's recommendations or design specifications and follow best professional practices.

2) If, as part of an agricultural water supplier's field-testing or field-inspections and analysis of existing measurement devices for the purposes of accuracy certification as required in section 597.4 (a), or during maintenance and operations, an installed device is determined by the agricultural water supplier to no longer meet the requirements of §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.

3) For measurement devices identified as out of compliance with §597.3 that the agricultural water supplier is unable to bring into compliance before submission its Agricultural Water Management Plan, the agricultural water supplier shall include, in its Agricultural Water Management Plan, a schedule, financing plan and budget for future corrective actions.

4) A description of best professional practices shall be included in the Agricultural Water Management Plan about (1) the collection of measured data and method of determining irrigated acres, (2) data quality assurance and control procedures, and (3) for devices measuring flow rate or velocity, the methods and frequency of measurements used for determining volumetric deliveries.

A) For devices that measure flow-rate, the documentation shall describe the measurement of the duration of delivery needed to calculate volume with the following formula: $\text{Volume} = \text{flow rate} \times \text{duration of delivery}$.

B) For devices that measure velocity only, the documentation shall describe the measurement of the cross-section of flow and the duration of delivery needed to calculate volume with the following formula: $\text{Volume} = \text{velocity} \times \text{cross-section flow area} \times \text{duration of delivery}$.

C) 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 describe the measurement of elevation that was used to derive flow rate at the device. The documentation will also describe the method or formula used to derive volume from the measured elevation value(s).