



*To promote the economic, social and environmental viability of Northern California by enhancing and preserving the water rights, supplies and water quality of our members.*

December 10, 2010

Mr. Manucher Alemi  
Chief, Water Use and Efficiency Branch  
Division of Statewide Integrated Water Management  
Department of Water Resources  
901 P Street  
Sacramento, CA 95814

**RE: A “Range of Options” for Appropriate Measurement**

Dear Manucher:

As work continues on the development of regulations for the agricultural water measurement requirements contained in SB X7 7, the Department of Water Resources (DWR) has an opportunity to craft an agricultural water measurement program that provides the appropriate tools for water resources managers to improve their water management decisions and encourages considerable participation from agricultural water management entities throughout the state. Most importantly, the enabling legislation specifically provided DWR with direction to develop a **“range of options”** that will facilitate maximum participation in the program, while recognizing wide diversity among California’s agricultural water suppliers with respect to their water management programs and water delivery practices. We urge DWR to avail itself of this opportunity to craft a **range of options** that will reflect the state’s geographic diversity and thus promote efficient water management throughout California by providing meaningful and effective tools for water resources managers.

Defining a range of measurement options too narrowly will lead to diminished participation in this important program and threatens its success in promoting efficient water management. In our view, simply allowing water resources managers to choose among different devices that can be used to measure at the farm-gate is insulting to their capabilities and defeats the opportunities to improve efficient water management in California. As we and others have mentioned repeatedly at meetings, limiting the range of options to farm-gate measurement forecloses on more effective, practical and affordable options that will provide the necessary tools for ultimately changing operations with an eye towards efficient water management and regional sustainability. For example, forcing farm delivery measurement for rice lands will not ensure accurate measurement of the water delivered and, in systems where tailwater is recovered and delivered to customers, will result in inaccurate reporting of the “total volume of water an agricultural water supplier provides to its customers,” as required by the legislation.

Furthermore, farm-gate measurement, even if coupled with water pricing, will not promote net conservation in the systems mentioned above because district-level efficiencies are already very high by virtue of tailwater reuse.

We fully comprehend the difficulty in crafting state-wide water measurement regulations. Fortunately, the legislation recognized this challenge and thus provided DWR the latitude to develop a **“range of options.”** NCWA and the Sacramento Valley’s water resources managers are committed to advance the economic, social and environmental sustainability of the Sacramento Valley by enhancing and preserving its water rights, supplies and water quality for the rich mosaic of farmlands, cities and rural communities, refuges and managed wetlands, and meandering rivers that support fisheries and wildlife. Put simply, we believe there is a better way to promote efficient water management in the Sacramento Valley (and potentially other places) that should be guided by the following:

- **The goal is water conservation—not metering.**

To date, water conservation and efficiency has been noted as the intent of SB X7 7, but, other than that reference, it has not entered into the dialogue surrounding the development of the agricultural water measurement regulations. NCWA represents entities with sophisticated water resources managers who are continually undertaking efforts to improve their ability to manage the resource. We would welcome the inclusion of water conservation and efficiency potential as the stated goal in the decision making process. This not only would improve the value of the agricultural stakeholder committee process in complying with the intent of the legislation, it also would help to justify the regulations that are developed. Unfortunately, some involved in this process have lost sight of this goal and assume that volumetric pricing alone will “conserve” water, when, instead, we should be having a valuable discussion on what types of water measurement will help inform water management decisions.

- **The “range of options” should center on a Best Management Practices approach.**

A BMP-based approach would establish the criteria that would need to be met to comply with the legislation, allowing water suppliers to craft water measurement programs that are consistent with local water management objectives and function within their unique systems. The diversity of agricultural water management systems in California does not allow for a “one-size-fits-all” approach to water measurement. The BMP approach, consistent with the legislation, would require agricultural water suppliers to adopt measurement methods and/or install the appropriate devices to: 1) accurately measure the total volume of water delivered to their customers; 2) adopt a pricing structure based at least in part on quantity delivered to their customers; and, 3) provide information to empower water managers to manage the resource in a manner that promotes regional self-reliance and sustainability as described in the State policy in Water Code Sec. 85021. The burden would be on the water suppliers to demonstrate that they are meeting these requirements in the legislation, while allowing measurement programs to be developed that efficiently and accurately measure water delivered in varied and unique water supply systems throughout the state.

As discussed above, a range of options that is otherwise limited to types of devices that can be installed at the farm-gate will not lead to improved water efficiency and will limit the number of agricultural water suppliers that will be able to participate in the program. To be clear, nothing

in the legislation directs or requires farm-gate level measurement. All measurement descriptions are at an aggregate scale and nowhere in the legislation are agricultural water suppliers required to adopt a pricing structure based upon deliveries to individual customers.

- **A phased approach.**

For many entities, these new regulations have the potential to require substantial investments in infrastructure and labor that will require multiple fiscal years to finance. A phased approach will provide agricultural water suppliers, many of whom are public agencies, with the time needed to make the budget and rate decisions (which are subject to Prop. 218 landowner approval), as well as technical evaluations, necessary to comply with the new requirements.

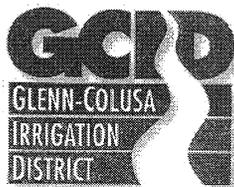
NCWA and Sacramento Valley water resources managers appreciate the opportunity to comment on the process underway. It is our hope that in the end, new agricultural water management regulations can be crafted in a way that complies with the legislation, provides value to DWR and establishes a program that will empower water resources managers.

Sincerely,

A handwritten signature in black ink that reads "Todd N. Manley". The signature is written in a cursive, flowing style with a long horizontal stroke at the beginning.

Todd N. Manley  
Director of Government Relations

cc: Director Mark Cowin  
Stein Buer  
Kamyar Guivetchi



December 13, 2010

Manucher Alemi  
California Department of Water Resources  
Water Use Efficiency Branch  
SBX7-7 Program  
P.O. Box 942836  
Sacramento, CA 94236-0001

SUBJECT: Enactment of Emergency Regulations

Dear Manucher,

The intent of this letter to you, your staff, and Department of Water Resources' (DWR) policy makers is to provide some context to the water measurement regulations required pursuant to Paragraph 10608.48(i)(1) of SBX7-7 and attempt to offer a path to move forward to comply with this legislation.

From our perspective, the Ag Stakeholder Committee (ASC) process led by DWR has been very focused on specific measurement devices and an accuracy standard that will severely restrict a range of options that is required by the legislation. In the absence of new information, it seems evident that next week we will simply be discussing what DWR has decided upon in terms of the device and accuracy. Obviously, it would have been easier for all of us if the legislature would have just written those specifics into SBX7-7; however, the legislature did not and, in fact, provided for flexibility for measurement. We are hopeful that DWR, the Water Commission, and others will consider carefully the language of the legislation, as well as its intent prior to adopting regulations for measurement.

Our view is that the legislation is not intended to simply measure water for the sake of measurement, rather the intent is that water supplies are used efficiently and conserved where possible. This ASC process must focus on those broader policy implications. Unfortunately and understandably, DWR has focused on the measurement debate in the ASC meetings to comply with dates in the legislation; however, as a result, we have lost the context of measurement to pricing and efficiency, which need to be included in order to have a balanced discussion on measurement methods and accuracy.

To date, I have heard of three purposes as to why to measure:

1. Because the legislation says so
2. It is an efficient water management practice
3. To implement volumetric pricing based, in part, on quantity delivered

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Unfortunately, until a determination is made for the ultimate purpose and need for measurement, it will be impossible to arrive at a measurement solution and a range of options as mandated by the legislation. Below, I have outlined some perspectives associated with the above three purposes.

Measurement – Because the legislation says so

We have heard on several occasions that measurement is required because the legislature passed SBX7-7. No one will disagree that we need to comply with the law; however, DWR and the stakeholder members must agree that the legislation is open to interpretation of what is actually required. If it were not, we would not be having this discussion. Questions such as “aggregate turnout deliveries” and “range of options” within the legislation allow for ASC members on all sides to have differing opinions on how to implement measurement. Thus, to simply point at the legislation and state “just do it,” is a disservice to all, and we must move on to the other two remaining purposes of measurement and, in essence, arrive at a “policy” as to why we are measuring and what information is needed as to device and performance standards to meet that overall policy. DWR has the ability to set policy as it pertains to the “end goal” of measurement and should endeavor to do so.

Yet, even while this legislation is in the process of being implemented, some are already calling for “additional conservation measures, such as minimum performance criteria for management and maintenance by agricultural water suppliers; water application and consumption rates for principal crops and soils; and development of an operational definition of water “waste” that can establish a contemporary floor for acceptable water management.”

([http://switchboard.nrdc.org/blogs/bnelson/a\\_water\\_agenda\\_for\\_governor\\_br\\_1.html](http://switchboard.nrdc.org/blogs/bnelson/a_water_agenda_for_governor_br_1.html))

If, in fact, the above “conservation” measures are the unspoken purposes of measurement, then we should have that discussion from a policy standpoint on meeting these future information and regulatory needs, and not be frustrated by this process in which we are attempting to institute measurement for the sole purpose of implementing volumetric pricing pursuant to SBX7-7.

Measurement – Efficient Water Measurement Practice

*Section 10608.48(b). Agricultural water suppliers shall implement all of the following critical efficient management practices:*

- (1) Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10..... (which states that an agricultural water supplier shall submit an annual report to the department that summarizes aggregated farm-gate delivery data, on a monthly or bi-monthly basis, using best professional practices).*

Water agencies have, and will continue to expand, active and robust measurement throughout their distribution systems including main diversion points, laterals, sublaterals, spill points, relift stations, etc. In fact, water agencies have made significant investments in canal automation, measurement reports, conjunctive use programs, conveyance

improvements, and reuse facilities all for the purpose of managing water supplies under a broad range of hydrology, delivery constraints, and ecosystem needs. As reported in *DWR's Bulletin 160*, ag water efficiency in the state is very high and, in terms of conserving water that is truly wasted, there are few opportunities remaining, with most recoverable water being used for other beneficial uses.

If DWR wants to know the volume that water agencies deliver to their respective customers in order to calculate efficiency, which measurements are appropriate or, better said, where should "aggregated farm gate delivery" be calculated? For example, if an agency has a main diversion point on a river, then compares that to the total of all laterals, then compares that to the total of all farm gate deliveries, which "aggregated data" is correct, or which number would be used to calculate an "efficient water measurement practice." As an example, the California Aqueduct uses Venturi meters (known to have measurement error exceeding 20%) to deliver water to water agencies, who then have propeller meters (6% manufacturer accuracy) on individual turnouts. From an efficient water measurement practice standpoint, which device(s) or total use is appropriate for efficiency calculations? Both are aggregated volumes, but which should be reported under 531.10?

Aside from the issue of where measured data should be aggregated and how to comply with 531.10 reporting, the question then becomes will accurate water measurement equate to efficient water use? No, it will not. To date, not one person in the stakeholder group has stated that water measurement, in and of itself, will result in water conservation or efficient water use. If measurement is tied to pricing, perhaps there could be some reduction of applied water (though not necessarily water conservation) at the field level but, to date, there has been no comprehensive discussion of measurement and pricing. For example, growers do not look at a meter and determine how much water to apply to a field; they use information such as moisture sensors, satellite ET information, plant tissue samples, reuse, or use water for dual purposes including environmental enhancement, etc. to determine delivery and use, but never by setting a flow rate on a meter. A meter is simply used to calculate the cost associated with that water use.

I raise this issue because there seems to be significant effort and concern to arrive at an extremely high level of accuracy at the farm gate, yet other factors must be evaluated or, better said, DWR has left other factors associated with measurement unaddressed, including pricing and basin efficiencies. If DWR is looking solely at farm gate measurement and accuracy as a justification that it will increase water use efficiency, that makes little sense. For example, if a grower has a crop that requires 4.0 acre-feet/acre, a device that is 6% variable will read 0.24 acre-feet/acre high or low, another device that is 15% variable will read 0.60 acre-feet/acre high or low. The question is, for that additional 0.36 acre-feet/acre (.60 -.24) of more accuracy, will the grower take an action to conserve water or be more efficient?

Yet, in the context of the ASC meetings, we have been looking at increased accuracy in the context of measurement only and trying to develop regulations that DWR can adopt, and this is a disservice to the process. It is not until the measurement conversation is

paired with pricing, or basin efficiencies, does the accuracy of measurement then become relevant.

Measurement - To implement volumetric pricing based in part on quantity delivered  
*Section 10608.48(b): Agricultural water suppliers shall implement all of the following critical efficient management practices:*

- (1) Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10 and to implement paragraph (2).*
- (2) Adopt a pricing structure for water customers based at least in part on quantity delivered.*

It has been several years since AB1404 passed and, to date, DWR has not implemented the reporting requirements in 531.10 that was a provision of AB1404, nor have other entities demanded that AB1404 be enforced. In other words, reporting of "aggregated farm gate deliveries" has not been a significant issue and no one has stated that simply reporting water use pursuant to 531.10 would result in more efficient use of water. Therefore, it is only the requirement to adopt a pricing structure based in part on quantity delivered that is necessitating the need and "renewed interest" in measurement at the farm gate level.

#### Volumetric Pricing

*.... Adopt a pricing structure for water customers based at least in part on quantity delivered.*

The legislation does not require that water agencies report to DWR how they will comply with this pricing requirement, other than to state that pricing should be a component of the Water Conservation Plan.

As stated above, for agencies charging volumetrically, the amount measured will have a direct effect on the amount charged to the grower. However, the legislation allows for water agencies to have a pricing structure that is based in part on quantity delivered; therefore, it is likely and should be expected that some agencies may not charge strictly or entirely on a volumetric basis.

For example, an agency may charge 75% of its costs using a fixed land assessment, with the 25% balance of the costs being charged volumetrically. Agencies may prefer this revenue method as reducing applied water doesn't reduce costs and having a "base revenue or assessment" would ensure collection of annual revenue to cover costs. Under this pricing scenario, the accuracy of measurement becomes even less critical as only a portion of the total water supply is measured volumetrically.

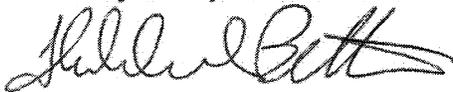
Hopefully, the above information and examples provide some context as to the need to identify how measurement information may be used; why a high level of measurement accuracy may not be warranted; why including basin efficiency in the discussion is relevant; and why a pairing pricing with measurement is a necessary conversation.

Based on the above information, a course of action to move forward would be the following:

1. DWR should develop a Policy defining the purpose of measurement and pricing as it pertains to the legislation. If the purpose is conservation and water use efficiency, the Policy should clearly articulate how measurement and pricing will result in conservation and efficiency and, additionally, how quantifying levels of accuracy will meet that Policy directive.
2. Consistent with this new Policy, develop a range of performance based options that that allows for acceptable measurement practices, including measurement at the turnout or measurement at the lateral. Also, another option would be to include a specific measurement exemption to CVP contractors complying with USBR Conservation Plans.
3. Consistent with this new Policy, implement a phased approach to comply with the measurement requirement. Water agencies do not have enough time during the maintenance season to install measurement devices in a single year or the finances to do so by July 2012. Further, it is also unlikely that manufacturers will have the devices available in a single year to supply all the water agencies in the state who would be installing new devices.
4. Consistent with this new Policy, discuss pricing and basin efficiencies in concert with measurement and how all these activities will jointly meet DWR's policy.
5. DWR, in consultation with water agencies, develop a pilot project that will demonstrate that measurement, pricing, and basin efficiencies will support DWR's Policy and be consistent with the legislation. This information could also be used in the reporting requirements back to the State Water Resources Control Board and the Legislature.

Our hope is that this effort is not regulatory in nature, but rather is a voluntary program that will meet the requirements of the legislation, provide data to DWR and others that is useful in statewide water use and planning, and ensure water supplies are being used as efficiently as possible from local, regional, and statewide perspectives.

Thank you for your consideration.



Thaddeus L. Bettner  
General Manager

TO: AS COMMITTEE  
FROM: THAD BETNER  
GCD

DRAFT

## Water Resources Management in the Sacramento Valley: A Regulatory Proposal for Effective Water Measurement

### Legislative Mandate - Measurement

Paragraph 10608.48(i)(1) of SBx7-7 states:

*The department shall adopt regulations that provide for a range of options that agricultural water suppliers may use or implement to comply with the measurement requirement in paragraph (1) of subdivision (b).*

Agricultural water suppliers are deemed to be in compliance with the legislation if they have a scheduled process or have completed the implementation of programs that meet the following criteria:

- (1) *Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10 [summarizing aggregated farm-gate delivery data] and to implement paragraph (2).*
- (2) *Adopt a pricing structure for water customers based at least in part on quantity delivered.*

### Proposed Regulation

(1) To comply with the 531.10 reporting requirement as required in AB1404, agricultural water suppliers, not excluded under Section 10853 of SBX7-7, shall report aggregated farm-gate deliveries to the Department using devices on individual farm-gates capable of  $\pm 15$  percent accuracy in a laboratory setting, or using devices on laterals, which aggregate individual farm-gates, capable of  $\pm 5$  percent accuracy in a laboratory setting. All devices shall be maintained in a manner consistent with manufacturer recommendations and best professional practices.

(2) To comply with adopting a pricing structure for water customers based at least in part on quantity delivered, agricultural water suppliers, not excluded under Section 10853, shall measure water delivered utilizing one of the following:

(a) Lateral Measurement. Devices installed to comply with this section shall be capable of  $\pm 5$  percent accuracy in a laboratory setting and shall be maintained in a manner consistent with manufacturer recommendations and best professional practices. Lateral measurement and volumetric use shall be apportioned to customers as determined by the agricultural water supplier.

(b) Existing farm gates. Existing in-place devices shall be capable of  $\pm 15$  percent accuracy in a laboratory setting and shall be maintained in a manner consistent with manufacturer recommendations and best professional practices.

(c) New farm gates. Any new devices installed to comply with this section shall be capable of  $\pm 10$  percent accuracy in a laboratory setting and shall be maintained in a manner consistent with manufacturer recommendations and best professional practices.

The location of measurement shall be at the farm gate unless a supplier includes in its Agricultural Water Management Plan pursuant to Section 10820 a plan to demonstrate that farm

gate measurement is not technically or financially feasible as a long-term measurement means and/or that measurements taken at other locations in the water distribution system will support implementation of aggregated farm delivery measurement and adoption of a water pricing structure based at least in part on volume delivered.

Agricultural water suppliers that cannot utilize farm gate level measurement by the date set forth in Section 10608.48(a) shall use lateral measurement and apportionment to customers in accordance with Proposition 218 rates and pricing requirements as required by Article XIID of the California Constitution. Where best professional practices allow, agricultural water suppliers shall migrate from lateral level measurement to turnout level measurement.

(3) Agricultural water suppliers who are Central Valley Project contractors and in compliance with USBR water conservation plans shall be deemed to comply with these provisions.

Definitions

"Measurement standard" is defined as a manufacturer's accuracy rating for proprietary devices or a laboratory accuracy by an independent testing and certifying entity/laboratory or verified by irrigation specialists, a registered professional engineer, or by water supplier's water conservation coordinator. This measurement standard shall be fully documented in the Water Supplier's Agricultural Water Management Plans.

"Lateral" is defined as .....

**AB1404 Form Changes**

1. Delete optional questions,
2. Insert Reporting requirements, i.e. acreage limits for reporting, etc.
3. Change Important Note below to a disclaimer.

Disclaimer: Agricultural water supplier's total water use will always be different than Farm-Gate deliveries since measurement at these points do not account for other water management practices such as groundwater recharge/conjunctive use, conveyance losses, water transfers, water delivered for environmental purposes, reuse, wheeling to other agencies, urban use, recreational uses, rainfall, and spills entering or leaving the agency's service area, etc. Farm-gate delivery information should not be used to quantify agricultural water use efficiency pursuant to Section 10608.64.

**From:** Grant Davids  
**Sent:** Monday, January 17, 2011 10:58 AM  
**To:** Alemi, Manucher; [baryohay@water.ca.gov](mailto:baryohay@water.ca.gov)  
**Cc:** [Stephen.Hatchett@CH2M.com](mailto:Stephen.Hatchett@CH2M.com); [gyoung@tullyandyoung.com](mailto:gyoung@tullyandyoung.com); 'Divine, Anisa'; Ceppos, David M  
**Subject:** Draft Language for Measurement Option 3

Dear Manucher and Baryohay,

At the January 5 ASC meeting I was invited to draft additional qualifying language for measurement Option 3. A draft of that language is attached for your consideration.

I look forward to seeing all of you tomorrow.

Grant

\*\*\*\*\*  
Grant G. Davids, P.E.  
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\*\*\*\*\*

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### Option 3: Standard Based on Accuracy Measured at Lateral

*Draft language for qualifying the conditions under which Option 3 would be an acceptable form of farm delivery measurement.*

#### **Discussion**

There are likely to be certain physical circumstances where measurement at farm delivery gates is technically infeasible or so impractical that measurement at the lateral heading combined with a process for apportioning the lateral flow to individual farms becomes a better option for providing a sufficiently accurate estimate of the farm delivery volume for purposes of aggregate farm delivery reporting and volumetric charging. Obviously where conditions prohibit the practical deployment of any of the technically proven, customary measurement devices, lateral measurement with apportionment becomes a viable choice and perhaps the only reasonable option for these purposes.

Conditions encountered at some farm delivery gates that can influence the applicability and performance of measurement devices are summarized in Table 1.

Table 1. Farm/Field Delivery Gate Conditions Posing Challenges to Water Delivery Measurement

Condition	Implication
Extremely low available head through the farm delivery gate	Insufficient head to operate weirs and flumes; propeller meters restrict turnout capacity.
High sediment/silt loads in water	Sediment deposition in farm delivery culverts and changes flow cross sections/areas over time; acoustic velocity meters unsuitable (as well as cost prohibitive) because they require a constant cross section.
Extremely wide range of flow rates to be measured	Propeller flow meters and potentially weirs and flumes cannot operate accurately over the full range of flow velocities.
Heavy moss and algae loads in water	Clogs propeller flow meters causing inaccurate measurement and burdensome maintenance.

#### **Proposed Additional Language for Regulation**

[Note: first bullet below to be inserted into Jan 5, 2011 draft Option 3 language]

“...A water supplier using this option shall provide the following information in its Agricultural Water Management Plan:”

- A technical evaluation of the relative merits associated with farm gate and lateral-based measurement, including an assessment of the probable error associated with each measurement approach, supporting the determination that lateral-based measurement with apportionment is likely to provide more accurate accounting of farm deliveries than farm gate

measurement. [Note: this is the new provision.]

- A description of the methodology the supplier will employ to apportion the quantities measured at the lateral into volumes delivered to individual customers for purposes of reporting aggregated farm delivery and adoption of a water pricing structure based at least in part on volume delivered. [Note: This provision is already in the draft.]

**From:** Todd Manley [mailto:tmanley@norcalwater.org]  
**Sent:** Tuesday, January 25, 2011 5:02 PM  
**To:** Alemi, Manucher; Davidoff, Baryohay  
**Cc:** Ceppos, David M; clove@ccp.csus.edu; tbettner@gcid.net; lbair@rd108.org; grant@de-water.com; gkienlen@mbkengineers.com; rid@pulsarco.com; dguy@norcalwater.org  
**Subject:** Revised Agricultural Water Measurement Regulation

Please see the attached amended Agricultural Water Measurement Regulation with changes provided by the Sacramento Valley members of the ASC.

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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. Agricultural Water Measurement [Is this reg addition really necessary since it simply restates other water code sections? While this is good background for the regulation itself, it seems redundant and an unnecessary code addition. Prefer to strike and have this as a SBX7-7 implementation summary]**

Under the authority included under Paragraph 10608.48(i)(1), the Department of Water Resources shall adopt regulations that provide for a range of options that agricultural water suppliers may use or implement to comply with the measurement requirements in paragraph (1) of subdivision (b) of §10608.48.

For reference, §10608.48(b) of the California Water Code requires that:

*Agricultural water suppliers shall implement all of the following critical efficient management practices:*

*(1) Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10 and to implement paragraph (2).*

For further reference, paragraph (2) of §10608.48(b) of the California Water Code requires that agricultural suppliers:

*(2) Adopt a pricing structure for water customers based at least in part on quantity delivered.*

For further reference, §531.10 of the California Water Code require that:

*(a) An agricultural water supplier shall submit an annual report to the department that summarizes aggregated farm-gate delivery data, on a monthly or bi-monthly basis, using best professional practices.*

Note: Authority cited: Section 10608.48 (b), Section 531.10 Water Code. Reference:

**§597.1. Applicability [Is this reg addition really necessary since these applications are in other water code sections? While this is good background for the regulation itself, it seems redundant and an unnecessary code addition. Prefer to strike and have this as a SBX7-7 implementation summary]**

- a) Agricultural water suppliers that serve less than 10,000 irrigated acres are not subject to the SBx7-7 water measurement requirements. They remain subject to requirements of Section 531.10 of the Water Code if they deliver more than 2,000 acre feet of water or irrigate 2,000 or more acres of land.

- b) Agricultural water suppliers serving 10,000 or more irrigated acres but less than 25,000 irrigated acres are not required to implement the SBx7-7 water measurement requirements unless sufficient funding is provided specifically for that purpose. They remain subject to requirements of Section 531.10 of the Water Code.
- c) Agricultural water suppliers serving 25,000 irrigated acres or more shall be required to implement the SBx7-7 water measurement requirements and are subject to requirements of Section 531.10 of the Water Code.
- d) A wholesale agricultural water supplier that distributes or sells water to another water supplier (the receiving water supplier) for ultimate resale to customers is subject to the measurement regulations at the location at which control of the water is transferred to the receiving water supplier. It is not required to measure deliveries that the receiving water supplier makes to its customers. [Pending further work by DWR staff, this bullet will also clarify the applicability of measurement regulations to Joint Powers Authorities or other entities that act as agents to distribute water for USBR or DWR.]
- e) [Pending further work by DWR staff, this bullet will clarify the applicability of measurement regulations to agricultural water suppliers that provide water for ground water extraction
- f) Paragraph 10608.8 (d) also excludes from the measurement requirement any agricultural water supplier “that is a party to the Quantification Settlement Agreement, as defined in subdivision (a) of Section 1 of Chapter 617 of the Statutes of 2002, during the period within which the Quantification Settlement Agreement remains in effect.” [DWR staff to follow-up on which agencies are technically included in the QSA].
- g) Paragraph 10608.12(a) excludes the Department of Water Resources

**§597.2. Definitions [Note of caution...once these definitions are inserted into the Water code they become defining unless limited to the applicability of the actual regulation, perhaps the following addition would be helpful]. The applicability of the definitions under this Section shall only apply to Section 597.3.**

- (a) The terms used in this article are defined in this subdivision.
  - 1) “Accuracy” is defined as the range of measured flow rate relative to the actual flow rate, expressed as a percent. The percent shall be calculated as  $100 \times (\text{actual value} - \text{measured value}) / \text{actual value}$ .
  - 2) “Agricultural water supplier,” as defined in §10608.12(a), means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding 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.
  - 3) “Best professional practices” means practices attaining and maintaining accuracy of measurement and reporting devices and methods.

- 4) “Community conveyance system” is a lateral system not owned, maintained or otherwise controlled by the water supplier.
- 5) “Customer” means (DWR staff to follow-up on this definition).
- 6) “Delivery point” is the location at which the agricultural water supplier transfers physical control of irrigation water to a customer or group of customers. Delivery points can include farm-gates, turnouts to a community conveyance system, or turnouts to another water supplier.
- 7) “Farm-gate” means the point at which water is delivered from the agricultural water supplier’s distribution system to each of its customers. [§531(f)]
- 8) “Ground water recharge” is the mechanism by which surface water moves from the land surface, through the topsoil and subsurface, and into de-watered aquifer space, or through injection of water directly into the aquifer by wells.
- 9) “In house built devices” are those devices that are manufactured by an entity other than a licensed manufacturing business.
- 10) “Lateral” is a portion of an agricultural water supplier’s distribution system that directly feeds multiple farm-gate turnouts and is generally supplied from other primary or secondary canals or pipelines...
- 11) “Measurement device” is the means by which the water supplier measures the water delivered. Measurement devices generally fall into two categories: totalizing and non-totalizing. Totalizing devices provide a direct measurement of volume delivered, and include most meters, such as propeller meters. Non-totalizing devices require a combination of measurements, such as flow rate and duration or head difference and duration, in order to determine the volume of water delivered.
- 12) “On-site built devices or structures” measurement devices that are built in-situ on water conveyance system.
- 13) “Recycled water” is defined in subdivision (n) of Section 13050 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) “Standard” is the criterion that establishes the accepted accuracy levels.

Note: Authority cited: Section 10608.48, Water Code. Reference: Sections 10608.

### **§597.3 Agricultural Water Measurement Range of Options Regulation**

- a) **Eligible Measurement Devices.** Agricultural water suppliers shall measure water delivered using devices that can be shown to be accurate within  $\pm XX\%$  by flow rate in the laboratory or by in-field certification following installation. The manufacturer’s accuracy may be used for off-the-shelf proprietary devices installed in accordance with

the manufacture's specifications or custom-built devices that are certified by licensed or professional testing organizations or professional engineers.

**b) Measurement Location.** Measurement of flow rate using devices approved in Section 597.3(a) shall be made at the point of delivery to water supplier customers or at a point upstream of one or more customers provided that the supplier provides the following information in its Agricultural Water Management Plan:

- i. Information documenting that measurement under section 597.3(a) is not technically feasible, legally allowable, or provides unreliable measurements for reporting and pricing.

Water suppliers may include a technical evaluation of the relative merits associated with farm gate and lateral-based measurement, including an assessment of the probable error associated with each measurement approach, supporting the determination that this option is likely to provide more accurate accounting of customer deliveries than at the customer point of delivery.

- ii. The methodology the supplier will use to apportion the quantities measured into volumes delivered to individual customers for purposes of reporting aggregated farm delivery and adoption of a water pricing structure based at least in part on volume delivered. This methodology must:
  1. Account for differences in water use among individual customers, using information that may include, but is not limited to, irrigated acreage, crop, and irrigation system
  2. Be formally approved by the supplier's governing body (e.g., Board of Directors, Proposition 218 process)
  3. Accommodate protests of allocation methods and resulting volumes while assuring that all measured delivery is accounted for.

**c) USBR Water Supplier**

An agricultural water supplier that has a current, approved United States Bureau of Reclamation Water Management Plan prepared for compliance under Bureau of Reclamation Mid-Pacific Region's Conservation and Efficiency Criteria (Criteria) shall be deemed in compliance with the measurement requirement, provided that all irrigation water delivered by that supplier is delivered through devices that comply with Reclamation's measurement accuracy standards outlined in the Best Management Practices of the Criteria and is consistent with the metering requirement in CVPIA Section 3405(b).

- d) **Installation, Operation and Maintenance of Agricultural Water Measurement devices.** All measurement devices, shall be correctly installed, maintained, inspected, and monitored. Devices shall be appropriate for the site and installed and maintained in a manner consistent with the manufacturer's recommendations, industry standards and best professional practices.

DRAFT

**From:** Grant Davids [<mailto:Grant@de-water.com>]

**Sent:** Monday, February 14, 2011 9:07 AM

**To:** Ceppos, David M

**Cc:** Alemi, Manucher; Mills, Richard; Jemaa, Fethi Ben; [gyoung@tullyandyoung.com](mailto:gyoung@tullyandyoung.com); Guivetchi, Kamyar; Frame, Kent; [AMiller@waterboards.ca.gov](mailto:AMiller@waterboards.ca.gov); Kenner, Spencer; Love, Christal; [Stephen.Hatchett@CH2M.com](mailto:Stephen.Hatchett@CH2M.com); Marsh, Lorraine; Bryan Thoreson

**Subject:** Grant Davids Comments on Draft Measurement Materials

David,

Thank you for getting these materials out well in advance of the meeting...very helpful. I will not be able to attend but did take the time to review and comment. Please see attached.

My most substantial comment, found in the discussion paper, is summarized briefly below:

- Consider developing a standard for average error among devices rather than a standard that applies to every device. The average error standard would focus on sufficient accuracy for aggregate reporting, which in my view is the more important factor. For purposes of volumetric billing, suppliers should be left to their own means and processes to work out with their customer acceptable ranges of variability in accuracy among devices. If the average error is within bounds, why should DWR care about individual device error if suppliers and their customers are happy? Applying the standard for every device will impose unnecessary cost. Alternatively, if DWR interprets the law to require a per device standard, that standard should be much looser than one applicable to the average.

Part of this argument you've heard many times before: that suppliers and customers will find sufficient device accuracy levels on their own (as they currently do). All I'm adding is the idea that leaving suppliers and growers to come to their own terms on individual device accuracy becomes much more acceptable provided that average accuracy among devices meets a certain standard.

Notwithstanding the above, I also commented on the draft regulation. I found it difficult, as I suspect others will, to comment on the language without the XX's, YY's, etc. being specified; the numbers cannot be separated from the language.

Best of luck with the meeting.

Grant

\*\*\*\*\*

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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. Agricultural Water Measurement**

Under the authority included under California Water Code §10608.48(i)(1), the Department of Water Resources shall adopt regulations that provide for a range of options that agricultural water suppliers may use or implement to comply with the measurement requirements in paragraph (1) of subdivision (b) of §10608.48.

For reference, §10608.48(b) of the California Water Code requires that:

*Agricultural water suppliers shall implement all of the following critical efficient management practices:*

- (1) Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10 and to implement paragraph (2).*
- (2) Adopt a pricing structure water customers based at least in part on quantity delivered*

*Note: These two subparts of §10608.48(b) specify reporting and adopting a volumetric water pricing structure as the purposes of water measurement. However, this regulation does not address these purposes, and only deals with developing a range of options for water measurement. Other critical efficient water management practices are also outside the scope of this regulation.*

Note: Authority cited: §10608.48 (b), §531.10 Water Code. Reference:

**§597.1. Applicability**

- a) Agricultural water suppliers that serve less than 10,000 irrigated acres are not subject to the §10608.48(b) water measurement requirements.
- b) Agricultural water suppliers serving 10,000 or more irrigated acres but less than 25,000 irrigated acres are not required to implement the §10608.48(b) water measurement requirements unless sufficient funding is provided specifically for that purpose, as stated under §10853.
- c) Agricultural water suppliers serving 25,000 irrigated acres or more shall be required to implement the SBx7-7 water measurement requirements.
- d) A wholesale agricultural water supplier that distributes or sells water to another water supplier (the receiving water supplier) for ultimate resale to customers is subject to the measurement regulations at the location at which control of the water is transferred to the

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receiving water supplier. It is not required to measure deliveries that the receiving water supplier makes to its customers. Canal authorities or other entities that convey or deliver water through facilities owned by a federal agency are not subject to these water measurement requirements.

- e) For an agricultural water supplier that pumps groundwater for delivery to its customers, those deliveries are subject to the measurement requirement at the point of delivery to the customer.
- f) §10608.8 (d) also excludes from the measurement requirement any agricultural water supplier “that is a party to the Quantification Settlement Agreement, as defined in subdivision (a) of Section 1 of Chapter 617 of the Statutes of 2002, during the period within which the Quantification Settlement Agreement remains in effect.”
- g) §10608.12(a) excludes the Department of Water Resources.
- h) Agricultural water suppliers that are required to submit water conservation plans to the United States Bureau of Reclamation pursuant to either the Central Valley Project Improvement Act (Public Law 102-575) or the Reclamation Reform Act of 1982, or both, shall be deemed in compliance with the measurement requirement, if all irrigation water delivered by that supplier is delivered through devices that comply with the measurement accuracy standards outlined in the Conservation and Efficiency Criteria Standards written for Public Law 102-575, §3405 (e).

Note: Authority cited: §10828. Water Code.

#### **§597.2. Definitions**

- (a) The terms used in this article are defined in this subdivision.
  - 1) “Accuracy” is defined as the range of measured delivered volume, velocity or flow rate relative to the actual delivered volume, velocity, or flow rate, expressed as a percent. The percent shall be calculated as  $100 \times (\text{measured value} - \text{actual value}) / \text{actual value}$ , where “measured value” is the rate indicated by the device and “actual value” is the rate as determined through laboratory, design or field testing protocols that use best professional practices.
  - 2) “Agricultural water supplier,” as defined in §10608.12(a), means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding 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.
  - 3) “Best professional practices,” as defined in §531(d), means practices attaining and maintaining accuracy of measurement and reporting devices and methods.

- 4) "Community conveyance system" is a distribution system not owned, maintained or otherwise controlled by the agricultural water supplier subject to these regulations.
- 5) "Customer" means the location of the last point of control by the agricultural water supplier into any subsequent conveyance system to accept water delivered by the supplier. Examples include a farm-gate, community conveyance system, and a retail water supplier.
- 6) "Delivery point" is the location at which the agricultural water supplier transfers control of irrigation water to a customer or group of customers. Delivery points can include farm-gates, turnouts to a community conveyance system, or turnouts to another water supplier.
- 7) "Farm-gate", as defined in §531(f), means the point at which water is delivered from the agricultural water supplier's distribution system to each of its customers.
- 8) "In-house built device" means a measurement device that is manufactured by a water supplier or by others to specifications provided by a water supplier.
- 9) "Lateral" is a branch of an agricultural water supplier's distribution system that supplies multiple customers.
- 10) "Manufactured Devices" means devices that are manufactured/marketed under exclusive legal rights of the manufacturer and certified to meet industry standards.
- 11) "Measurement device" means a device or a structure by which the agricultural water supplier measures the water flow rate.
- 12) "On-site built device" means a measurement device that is built in-situ on a water conveyance system.
- 13) "Recycled water" is defined in subdivision (n) of §13050 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) "Standard" is the numeric criterion that establishes measurement, accuracy.

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

### §597.3 Agricultural Water Measurement Range of Options.

An agricultural water supplier subject to these regulations may choose any single or combination of options listed in paragraphs (a) and (b) of this section as necessary to best accommodate individual supplier circumstances. Best professional practices shall be used to design, operate, maintain and replace measurement devices.

#### a) Options Applicable to Measurement at the Customer Delivery Point :

**Comment [GD1]:** This phrase begs definition. Maybe "third party vendor" would be better? Or, re-phrase as edited.

**Deleted:** by an entity other than a licensed manufacturing business.

**Deleted:** portion

**Deleted:** directly feeds

**Comment [GD2]:** Maybe too late now, but "off the shelf" might be clearer

**Comment [GD3]:** This is likely to be overly narrow. For example, orifice gates are manufactured by Waterman, Fresno Valves and Casting and perhaps others, and I am not sure whether any of them hold "exclusive legal rights" for anything.

**Comment [GD4]:** Don't most manufacturers do their own in-house testing? If so, does that comply with "certified to meet industry standards"?

**Deleted:** delivered to determine a numerical value.

**Deleted:** the accepted

**Deleted:** levels

**Comment [GD5]:** The rationale appears to be that devices are either existing in which case 3 applies OR they are newly installed or replaced devices in which case either 1 or 2 apply. And that there would be different (presumably lower) standards for existing devices as compared to new devices. And if existing devices don't achieve standards, then they need to be fixed.

Inasmuch as the beginning point for all suppliers is their existing measurement devices, and that all of those devices are either manufactured or on-site/in-house devices, is 3 really needed? And, once installed, does a device change status from manufactured/on-site/in-house to existing and then a different standard applies? I feel that 3 should be deleted provided that XX and YY are appropriately established.

**Deleted:** Location of Transfer to

**Deleted:** of an Individual Customer

1) *Measurement Using Manufactured Devices:*

Agricultural water suppliers shall measure water delivered to each customer delivery point using manufactured devices that are certified to at least be accurate within ±XX% by volume, velocity, or flow rate in the laboratory (before field installation). The certified accuracy must be achieved over the range of flow rates or velocities under which the device normally will be measuring. The accuracy shall be determined through testing by a certified laboratory or professional testing organization (see §597.5).

Comment [GD6]: This should be added to the words defined.

Deleted: apply to

Deleted: y conditions

Deleted: operating in most circumstances after field installation.

Or,

2) *Measurement Using On-site or In-house Built Devices:*

Agricultural water suppliers shall measure water delivered to each customer delivery point using measurement devices that are certified to at least be accurate within ±YY% by volume, velocity, or flow rate. The accuracy must apply to the range of flow rate or velocity conditions under which the device will be operating in most circumstances after field installation. Certification shall be determined through in-field testing of an individual device or statistically representative sample of devices and performed by an entity or individual as specified under §597.5.

Comment [GD7]: If you have not already, I suggest that DWR consult manufacturers on this. Does a measurement device certification process/authority already exist or not? If not, how is this brought into existence? What constitutes a professional testing organization?

Comment [GD8]: Suggest parallel edits to above para, as applicable.

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Or,

3) *Measurement Using Existing Devices:*

For devices installed prior to November 9, 2009, agricultural water suppliers shall measure water delivered to each customer using devices that are certified to at least be accurate within ±ZZ% by volume, velocity, or flow rate. The accuracy must apply to the range of flow rate or velocity conditions under which the device will be operating in most circumstances after field installation. Certification shall be determined through in-field testing of an individual device or statistically representative sample of devices and performed by an entity or individual as specified under §597.5. After replacement of an existing measurement device, the new or replacement device must meet the requirements of section 597.3(a) (1) or (2).

Comment [GD9]: Needs clarification. "In-field testing" should not necessarily denote only flow measurement. For example, for a standard weir configuration (vee notch, rectangular, broad-crested, etc., etc.) certification consists primarily of an as-built survey to determine critical dimensions and elevations. Once these values are known and used to develop a rating table, then the accuracy normally associated with the weir is assumed to have been achieved. There are references, such as the reference distributed by Stuart Styles (Bos, year?)

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**b) Options Applicable to Measurement Upstream of the Location of Transfer to the Delivery Points of Multiple Individual Customers**

1) *Measurement Using Manufactured Devices:*

Agricultural water suppliers shall measure water delivered to each designated upstream location using manufactured devices that are certified to at least be accurate within ±AA% by volume, velocity, or flow rate in the laboratory (before field installation). The accuracy must apply to the range of flow rate or velocity conditions under which the device will be operating in most circumstances after field installation. The accuracy shall be determined through testing by a certified laboratory or professional testing organization (see §597.5).

Comment [GD10]: I strongly support this exemption because there will be cases where this is a better option. However, I don't understand the logic of having different numeric standards for the same kinds of devices just because they are in a different location within the distribution system. Meters are meters, weirs are weir, etc., regardless of whether they are located at a delivery point or at a lateral heading. Therefore, I suggest having one set of measurement standards applicable to 1) manufactured devices and 2) on-site/in-house devices and then a section dealing with measurement location stating that the location of measurement shall be the delivery point or elsewhere according to the exemption provisions.

Or,

2) *Measurement Using On-Site or In-house Built Devices:*

Agricultural water suppliers shall measure water delivered to each designated upstream location using measurement devices that can be certified to at least be accurate within  $\pm BB\%$  by volume, velocity, or flow rate. The accuracy must apply to the range of flow rate or velocity conditions under which the device will be operating in most circumstances after field installation. Certification shall be determined through in-field testing of an individual device or statistically representative sample of devices and performed by an entity or individual as specified under §597.5..

Or,

3) *Measurement Using Existing Devices:*

For devices installed prior to November 9, 2009, agricultural water suppliers shall measure water delivered to each designated upstream location using devices certified to at least be accurate within  $\pm CC\%$  by volume, velocity or flow rate. The accuracy must apply to the range of flow rate or velocity conditions under which the device will be operating in most circumstances after field installation. Certification shall be determined through in-field testing of an individual device or statistically representative sample of devices and performed by an entity or individual as specified under §597.5. After replacement of an existing measurement device, the new or replacement device must meet the requirements of §597.3 (b) (1) or (2).

c) A water supplier that uses one of the options under paragraph (b) of this section shall provide evidence in submitted Agricultural Water Management Plans pursuant to §10826 of the Water Code all of the following:

A) That measurement under section 597.3(a) is not legally accessible or technically feasible and cannot meet the required level of accuracy as specified in that section;

and,

B) The methodology the supplier will use to apportion the quantities of water delivered to individual customers must:

- (i) Account for differences in water use among individual customers, using information that may include, but is not limited to, irrigated acreage, soil, crop, and irrigation system
- (ii) Be formally approved by the supplier's governing body (e.g., Board of Directors)
- (iii) Be adequate for establishing a volumetric water pricing structure by the agricultural water supplier as determined by the suppliers governing body.

**Comment [GD11]:** Technical feasibility is too narrow. Supplier systems could be totally re-constructed to make delivery point measurement technically feasible but the cost would be ridiculously high. There needs to be some consideration of cost added.

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

**§597.4 Installation, Operation and Maintenance of Agricultural Water Measurement devices**

- a) All measurement devices, shall be correctly installed, maintained, operated, inspected, and monitored. Devices shall be appropriate for the site and installed and maintained in a manner consistent with the manufacturer’s recommendations and utilizing 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 not meet the requirements in §597.3(a) or §597.3(b), then the agricultural water supplier shall take appropriate corrective action to achieve the requirements.

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Comment [GD12]: Overly prescriptive. Suppliers should be allowed to choose the best solution, which will include all of the actions listed, but could involve other actions as well.

Deleted: either; ¶  
 A) service the device, ¶  
 B) recalibrate the device, ¶  
 C) re-engineer and/or re-install the device, or  
 D) replace the device.

- b) Records to document compliance with the regulations in §597.3 shall be maintained by the agricultural water supplier for at least 10 years. The records shall include at a minimum: evidence 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 date of inspection, maintenance, repairs, calibrations, and adjustments to measurement device.

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

**§597.5 Qualifications for Laboratories or Individuals Certifying Accuracy Ratings**

Certification of an individual device or type of device as required in §597.3 shall be documented by any of the following:

- a) ~~Manufactured Devices – testing will be performed by an entity, institution, or individual that has obtained certification from appropriate national organizations or accrediting institutions such as National Institute for Standards and Testing (NIST). The results of laboratory testing shall be provided to the agricultural supplier in (1) manufacture’s literature referencing the laboratory testing, or (2) laboratory reports documenting the testing results for the specific device or installation.~~

Deleted: Measurement Using

Comment [GD13]: This sounds ominous and possibly well beyond where industry is now. Again, I would vet this provision with device manufacturers.

- b) ~~In-house built devices – the design and installation requirements of an individual device constructed in-house (e.g. not in the field) shall be approved by a registered Professional Engineer.~~

Comment [GD14]: Use defined terminology

Deleted: Device manufactured in-house

- c) ~~On-site built devices – a registered Professional Engineer shall approve either (1) the design and installation of an individual device at a specified location, or (2) a standardized design and installation for a group of measurement devices constructed at various locations.~~

Comment [GD15]: What difference does it make when the certification is performed? Also, in some (maybe all) cases the device needs to exist before it can be certified.

Deleted: prior to construction or fabrication.

Comment [GD16]: Use defined terminology

Deleted: Device constructed on-site

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- d) Existing device or type of device – field testing of a statistically representative sample of existing device types or of an individual device shall be performed by individuals trained in the use of field testing equipment. The results of field tests will be reviewed and approved by a Professional Engineer.

**Comment [GD17]:** As noted above, a standard for existing devices should be eliminated since all devices, once installed, are existing devices of one type or the other. The concept of statistically representative sampling should be embedded in b and c, above. (Probably applies to a also, but leave that to the suppliers/testers.)

DRAFT

**Senate Bill X7-7**  
**Compilation of Public Comments on**  
**A2 – Range of Options for Water Measurement Regulation**

ISSUE	COMMENT 1	RESPONSE
<p>DWR’s rulemaking process must determine valid techniques to “measure the volume of water delivered to customers” to enable agricultural water suppliers to “adopt a pricing structure for water customers based at least in part on quantity delivered.” If the techniques chosen do not support customer billing, then they will not be consistent with the clear language and intent of the Act.</p> <p>Regulation should spell out a more complete framework for compliance. Section 10608.48(i) directs the Department to “adopt regulations that provide for a range of options that agricultural water suppliers may use or implement to comply with the measurement requirement...”</p>	(2) (26)	<p>Even though the adoption of a pricing structure is the duty of the agricultural water suppliers and falls outside the scope of the proposed regulation, DWR is taking into consideration the purpose of requiring water measurement as set by the legislation while developing a range of measurement options. The measurement options and the associated levels of accuracy requirements will need to be sufficient for fulfilling those purposes namely: data reporting and volumetric pricing.</p>
<p>Note of caution... Definitions in the regulation once inserted into the Water code they become defining unless limited to the applicability of the actual regulation, perhaps the following addition would be helpful]. The applicability of the definitions under this Section shall only apply to Section 597.3.</p>	(24)	<p>The applicability of the inserted definitions will be limited to the actual regulation. Proper language will be added to ensure that if needed.</p>
<p>Irrigation methods and infrastructure can vary depending on the region, crops, age, water supply, and topography, amongst other things. As a result, it is difficult, if not impossible, to identify a one-size-fits-all approach to agricultural water measurement. Can DWR set a range of options that accommodate various scenarios, e.g., measure at turnout/lateral, and exempt CVP contractors?</p>	(1), (13), (9)	<p>DWR, through the Agricultural Stakeholders Committee and its Measurement Sub-committee, is developing regulations that would provide for a range of options to accommodate the varied and diverse situations throughout the state while fulfilling the SBx7-7 legislation mandate. Among the special scenarios considered are: measurements at lateral point where farm-gate measurement is not technically or legally feasible; consider that USBR contractors are in compliance if they measure all their water using Bureau approved devices; Require lab/design accuracy standards instead of in-field accuracy standards.</p>

<sup>1</sup> Comment number referenced – see attached list with links to the original comments.

ISSUE	COMMENT 1	RESPONSE
<p>Although not every section of SBX7-7 implies that it is dealing with surface water, there are no sections that indicate it applies to groundwater. There are no provisions that authorize water suppliers to collect private records, to access private property or specify equipment on private wells and therefore I would suggest that DWR has no authority to request data from private wells to be included in reports. Additionally, incorporating groundwater “deliveries” adds on a significant layer of data and groundwater recharge activities that can potentially span several different projects, districts, regions and not to mention overlapping years which leads to even more potential problems when determining system efficiencies and reporting. The aquifer should be considered a storage facility rather than a conveyance facility and therefore the efficiencies and wasted water that SBX7-7 is geared towards doesn’t apply here.</p>	<p>(20)</p>	<p>Suppliers won’t be required to collect private well records. However, if an agricultural water supplier pumps groundwater then delivers it to its customers, those deliveries are subject to the measurement requirement at the point of delivery to customers. SBx7-7 requires suppliers to measure water deliveries to their customers irrespective of the source of that water whether it be surface water or groundwater. Groundwater recharge is outside the scope of this regulation and is being dealt with under different legislations.</p>
<p>While basin-wide water balances may be useful for state planning purposes, it is clear to us that such a coarse scale of analysis would not allow water suppliers to quantify the water delivered to individual customers, or form a legitimate basis for a volumetric pricing structure. Similarly, measurement at the distribution system lateral may have value for water system managers, but does not meet the intent of the law, as laterals typically supply multiple farms and turnouts.</p> <p>We find the text around measurement to multiple individual customers to be outside the intent of law. The legislation clearly states its intent to require water measurement – not estimation – of sufficient accuracy to support customer billing based at least in part on volume. It is still unclear to us how appropriate price signals can be sent without actually measuring the water provided to individual customers.</p>	<p>(2), (26)</p>	<p>DWR’s judgment is that basin-wide or district-wide measurement does not provide sufficient accuracy to price water at least in part on quantity delivered. Basin-wide or district-wide measurement is too aggregated, and would include too many crops, fields, and other conditions to provide a reasonably accurate estimate of water use by individual customers to be compliant with the provisions of 10608.48. However, DWR believes that basin-level and district-level information remains important for characterizing the efficiency of agricultural water use. (Detailed rationale is included in the A2 Measurement discussion paper.) Measurement at laterals will be accepted only for special cases where farm-gate measurement is not technically or legally feasible. Such exception is only allowed when suppliers demonstrate that: 1) That measurement under section 597.3(a) is not legally accessible or technically feasible and cannot meet the required level of accuracy as specified in that section; and 2) The methodology the supplier will use to apportion the quantities of water delivered to individual customers must account for differences in water use among individual customers, using information that may include, but is not limited to, irrigated acreage, crop, and irrigation system.</p>

ISSUE	COMMENT 1	RESPONSE
<p>It is questionable whether a numerical standard for measuring accuracy is in fact required. We are concerned that, if the standard of accuracy is too restrictive, or if the level of accuracy is applied too uniformly, and without accommodation of various agricultural practices and measurement methodologies, this could have the unintended effect of making compliance effectively impossible or lead to slower adoption rates. Is a numerical standard statutorily justified?</p>	<p>(22)</p>	<p>Suppliers that are subject to the requirements must measure the volume of water delivered to customers with sufficient accuracy. <u>Encyclopedia Britannica</u> defines <i>measurement</i> as “the process of associating numbers with physical quantities and phenomena”. Accuracy indicates proximity of measurement results to the true value; and a device is accurate means “capable of providing a correct reading or measurement”.                      In order to judge whether a measurement (which is numerically represented) is accurate or not, its deviation from the true value (or error) needs to be described using a numerical representation as well.</p>
<p>It will be helpful to get a compilation of accuracy standards of various measurement devices in the market to help make an informed decision on what level of accuracy is reasonable.</p>	<p>(10)</p>	<p>As part of providing background information and data for the ASC and its Measurement Subcommittee, DWR made a request for data on various agricultural water measurement devices and their respective accuracies from ASC/A2 committee members, experts, and agencies with existing agricultural water measurement program. This information will serve in setting informed and realistic accuracy standards for the proposed agricultural water measurement regulations that DWR is pursuing.</p>
<p>There are likely to be certain physical circumstances where measurement at farm delivery gates is technically infeasible or so impractical that measurement at the lateral heading combined with a process for apportioning the lateral flow to individual farms becomes a better option for providing a sufficiently accurate estimate of the farm delivery volume for purposes of aggregate farm delivery reporting and volumetric charging. Obviously where conditions prohibit the practical deployment of any of the technically proven, customary measurement devices, lateral measurement with apportionment becomes a viable choice and perhaps the only reasonable option for these purposes.</p>	<p>(19)</p>	<p>Measurement at laterals will be accepted only for special cases where farm-gate measurement is not technically or legally feasible. However, suppliers have to demonstrate that: 1) That measurement under section 597.3(a) is not legally accessible or technically feasible and cannot meet the required level of accuracy as specified in that section; and 2) The methodology the supplier will use to apportion the quantities of water delivered to individual customers must account for differences in water use among individual customers, using information that may include, but is not limited to, irrigated acreage, crop, and irrigation system.</p>

**Comment [GD1]:** I do not think this a compelling rationale for why a quantitative standard is needed. Obviously for current purposes, existing measurement is “sufficiently accurate” (because most districts are able to report aggregate deliveries and charge volumetrically), yet nobody really knows the accuracy levels being achieved. A more compelling rationale is that a quantitative standard leads to an objective process rather than a subjective one. However, it is clear to most of us that there is very little information about practically attainable measurement accuracy. Furthermore, we know that field measurement-based compliance would be a major, costly challenge for most districts. I conclude that a numeric standard linked to lab-determined accuracy enforced through best management practices is the way to go.

ISSUE	COMMENT 1	RESPONSE
<p>Is the intent of Section 10608.48 “water conservation” through water measurement and subsequent pricing structure?</p>	<p>(12)</p>	<p>The overarching intent of this legislation is water conservation and water use efficiency. Water conservation is highlighted in Chapter 1. General Declarations and Policy and elsewhere in SBx7-7. Section 10608 (e) declaring that “the success of state and local water conservation programs to increase efficiency of water use is best determined on the basis of measureable outcomes related to water use or efficiency”. Section 10608.4 requires implementation of specific efficient water management practices (EWMP). Section 10608.48 (a) and (b) require implementation of EWMPs. Water measurement and pricing structure are two critical EWMPs that have to be implemented.</p>
<p>This note will identify a potential problem with Option 2, Standard Based on Farm-Gate Accuracy Measured After Field Installation that is inherent in random sampling. We are concerned with meeting a standard. The greater the range, the more probable it will be that a district will generate in some future set of measurements an average accuracy that is non-compliant. Since the evaluations are assumed to be based on a random selection of measurement devices, any district could conceivably generate such a result. Also, any district may, with good fortune, produce a result that is better than their real accuracy.</p>	<p>(18)</p>	<p>The regulation’s language has been modified so that statistically representative sampling of devices be used instead of random sampling.</p>
<p>How does lab performance or a manufacturer’s specification translate to field performance? any information that you gather regarding field data should also be examined with similar scrutiny. Accuracy data obtained from Ag districts is valuable information as long as it is evaluated considering the operations and facilities of the corresponding district. If a district has a pipeline system that uses all new magnetic meters with an average field measured accuracy of 3% that shouldn’t apply to all districts nor just pipeline districts. Conversely, if an open channel district reports 20% then that shouldn’t apply to others just because they’re open channel systems also</p>	<p>(20)</p>	<p>We recognize that field performance is difficult to determine. As a result, suppliers are required to use measurement devices that meet minimum laboratory or design accuracy standards before field installation. However, those devices shall be appropriate for the site and installed and maintained in a manner consistent with the manufacturer’s recommendations and utilizing best professional practices.</p>

**Comment [GD2]:** Don’t oversell this. To the extent that water conservation is taken to mean making more water available for other uses, we all know that potential for water conservation is very small where irrigation return flows are recovered.

ISSUE	COMMENT 1	RESPONSE
<p>Why not consider differential measurement standards, the application of which would be determined by irrigation infrastructure in the districts. Differential standards based on existing infrastructure constitute a range, and have an advantage of greater likelihood of meeting the cost effectiveness criterion within the districts.</p>	<p>(3)</p>	<p>Compliance with the measurement requirement isn't subject to cost effectiveness. Nevertheless, DWR solicited from experts and agencies data on various agricultural water measurement devices and their respective accuracies to use in setting informed and realistic accuracy standards. Additionally, differential standards do not provide for an equitable and uniform process.</p>
<p>The proposed recalibration and record keeping requirements will be time consuming and burdensome to implement, not only for each District but also for DWR that will be overseeing the requirements. If the procedures and costs to implement the proposed measurement requirements are too restrictive or burdensome then many will question the value and cost of implementing them.</p>	<p>(16)</p>	<p>Overly prescriptive requirements for calibration and record keeping have been omitted, and suppliers are required to maintain / calibrate their measurement devices in a manner consistent with the manufacturer's recommendations and utilizing best professional practices. Records will be included in the Agricultural Water Management Plans (AWMP) and need to be kept for only two AWMP cycles (i.e., 10 years).</p>
<p>Provide sufficient time for agricultural water suppliers to achieve full compliance with the measurement requirements. The July, 2012 date is not practically feasible. Can DWR have a phased process through which a gradual water measurement program can be implemented?</p>	<p>(13) (9)</p>	<p>The A2 Subcommittee has discussed ways to address the challenges that water suppliers may face in planning, financing, and installing measurement devices. DWR staff has been advised that DWR may not have the authority to include in the regulation a final compliance date that is different from the July 31, 2012 date specified in SBx7-7. DWR will work with the ASC and A2 Subcommittee to explore other ways and options to phased implementation to address the challenges of planning, financing, and installing measurement devices.</p>

**Comments on A2 Measurement Range of Options**

No	Dated	Organization	Author	Comment
1	May 28, 2010	Agricultural Stakeholders Advisory Committee <i>This is not the SBX Agricultural Stakeholder Committee</i>	Mike Wade	<a href="#">Comment</a> (98 KB)
2	October 21, 2010	Pacific Institute and Natural Resources Defense Council	Juliet Christian-Smith and Edward Osann	<a href="#">Comment</a> (50 KB)
3	October 25, 2010	Santa Clara Valley Water District	Bob Siegfried	<a href="#">Comment</a> (50 KB)
4	October 28, 2010	Organization Environmental Defense Fund	Spreck Rosekrans	<a href="#">Comment</a> (59 KB)
5	October 29, 2010	Agricultural Water Management Council	Mike Wade	<a href="#">Comment</a> (2362 KB)
6	October 29, 2010	Santa Clara Valley Water District	Robert Siegfried	<a href="#">Comment</a> (12 KB)
7	November 11, 2010	Santa Clara Valley Water District	Robert Siegfried	<a href="#">Comment</a> (21 KB)
8	November 16, 2010	Natural Resources Defense Council and Pacific Institute	Ed Osann and Juliet Christian-Smith	<a href="#">Comment</a> (67 KB)
9	November 17, 2010	Organization Center for Irrigation Technology	Peter Canessa	<a href="#">Comment</a> (39 KB)
10	November 17, 2010	Environmental Defense Fund	Spreck Rosecrans	<a href="#">Comment</a> (55 KB)
11	December 10, 2010	Northern California Water Association	Todd Manley	<a href="#">Comment</a> (148 KB)
12	December 13, 2010	Glenn Colusa Irrigation District	Thaddeus L. Bettner	<a href="#">Comment</a> (2.52 MB)
13	December 17, 2010	Alta Irrigation District	Chris Kapheim	<a href="#">Comment</a> (627 KB)
14	December 17, 2010	Kings River Conservation District	David Cone	<a href="#">Comment</a> (85 KB)
15	December 17, 2010	Kings River Conservation District	David Cone	<a href="#">Comment</a> (148 KB)
16	January 4, 2011	Summers Engineering	Roger Reynolds	<a href="#">Comment</a> (42 KB)

17	January 5, 2011	Glenn Colusa Irrigation District	Thaddeus L. Bettner	<a href="#">Comment</a> (130 KB)
18	January 14, 2011	Santa Clara Valley Water District	Robert "Bob" Siegfried	<a href="#">Comment</a> (19 KB)
19	January 17, 2011	Davids Engineering, Inc.	Grant Davids	<a href="#">Comment</a> (409 KB)
20	January 19, 2011	Buena Vista Water Storage District	David Hampton	<a href="#">Comment</a> (49 KB)
21	January 24, 2011	Tulare Irrigation District	Aaron Fukuda	<a href="#">Comment</a> (409 KB)
22	January 25, 2011	Sustainable Conservation	J. Stacey Sullivan	<a href="#">Comment</a> (41 KB)
23	January 25, 2011	Modesto Irrigation District	Walter P. Ward	<a href="#">Comment</a> (128 KB)
24	January 25, 2011	Northern California Water Association	Todd N. Manley	<a href="#">Comment</a> (159 KB)
25	January 26, 2011	Santa Clara Valley Water District	Bob Siegfried	<a href="#">Comment</a> (24 KB)
26	January 26, 2011	Pacific Institute and Natural Resources Defense Council	Juliet Christian-Smith and Edward R. Osann	<a href="#">Comment</a> (88 KB)

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# Discussion Paper: Draft Range of Options for Agricultural Water Measurement

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*[Note: This part will be included in the A2 Water Measurement Discussion Paper]*

## 5.0 Frameworks Considered for Creating a Range of Water Measurement Options

DWR is required by CWC §10608.48(i)(1) to develop and adopt a regulation that provides for a range of measurement options. These options allow for a range of conditions and delivery system configurations, including pressurized pipe delivery, non-pressurized pipe delivery, and open-channel delivery.

DWR staff, with input from the Agricultural Stakeholder Committee and the A2 Subcommittee, considered three alternative frameworks for developing a range of options for measuring agricultural water deliveries:

- (1) **DWR list of acceptable devices:** Develop a regulation that includes a list of acceptable measurement devices maintained in defined manners to achieve desired accuracy. Suppliers could choose among those devices based on their local conditions.
- (2) **DWR performance standards for device accuracy:** Develop a regulation setting a performance standard that defines minimum benchmarks for device accuracy that could be met or bettered by a range of devices. Suppliers could measure delivery using greater accuracy than the standard, based on their and their customers' demands. Included under this option would be requirements defining standards for device rating or calibration but could also set minimum standards for administration, monitoring and maintenance protocols for devices.
- (3) **Locally-determined standards for device accuracy:** Develop a regulation that provides a process for suppliers to assess and report their measurement accuracy. For example, the regulation could specify a set of information that a supplier would report to DWR documenting 1) the procedures by which it determined sufficient accuracy, and 2) information documenting its measurement devices and accuracies. The information must demonstrate that the supplier's measurement accuracy is sufficient to meet the two purposes stated in SBx7-7: submit an annual report to the department that summarizes aggregated farm-gate delivery data, and adopt a pricing structure based in part on the volume delivered.

In evaluating these frameworks, DWR staff considered the following criteria:

- CWC §10608.48(b) directs a qualifying agricultural water supplier to measure with sufficient accuracy to (1) enable its adoption of a pricing structure based in part on

the volume delivered to customers, and (2) allow it to report to DWR a summary of aggregated farm-gate deliveries [CWC §531.10(a)]. This latter objective is tied to the stated intent in Section 1 of Assembly Bill 1404 that “[a]ppropriate measurement of water use facilitates better water management by making information available to local, state, and federal water managers and planners.”<sup>1</sup>

- The need for a certain degree of confidence – through use of a minimum benchmark - that data submitted to DWR [under CWC §531.10(a)] closely represents actual deliveries.
- The need to provide a reasonable degree of flexibility to agricultural water suppliers to accommodate a wide range of water delivery circumstances and supplier/customer relationships.
- The recognition that an agricultural water supplier and its customer have a business relationship associated with the delivery of water and the payment for such services. This relationship in itself can provide incentives necessary to measure accurately.
- The need to balance theoretically potential accuracy with economically and technically practical accuracy while meeting the objectives of the statute.

The recognition that the term “sufficient accuracy” in the statute refers to the measurement of a volume of water delivered to customers, which would be stated as a numeric value. Measuring and determining a numeric value would imply a numeric standard.

- The recognition that the delivery of water by most agricultural water suppliers is not equivalent to the sale of a commodity, which would be more responsive to market forces. Thus, the relationship between an agricultural water supplier and its customer and the need for accuracy may not be driven primarily by incentives associated with the cost of water and its delivery.

Based on these considerations, DWR staff proposes that the second framework – specifying a performance standard that defines minimum device accuracy benchmarks – provides the most appropriate framework to establish a range of measurement options. A performance standard meets the intent of the legislation in the most flexible and cost-effective manner.

Staff does not recommend adopting a list of acceptable measurement devices for the following reasons:

- Dictating specific devices can unintentionally constrain suppliers or impose unreasonable or unnecessary costs to accommodate the defined devices.
- Measurement technology changes over time, so a list of approved devices would need frequent review and modification.
- Measurement requirements are to assure agricultural water suppliers are able to meet 10608.48(b), which states “Measure the volume of water delivered to

Comment [GD1]: Same comment as below.

Comment [GD2]: It is good to see cost-effectiveness mentioned, but I do not feel that it has received adequate attention thus far.

<sup>1</sup> AB 1404 was approved by the Governor on October 14, 2007. Section 1 includes several legislative findings and declarations that demonstrate the intent of the statutes enacted by the bill.

customers with sufficient accuracy...” The paragraph is stated in terms of measurement accuracy, not specific devices or technologies.

Staff considered the request by several water suppliers that the regulation allow local conditions to determine appropriate measurement accuracy. The rationale suggested was that, once all suppliers adopt a pricing structure for water customers based at least in part on quantity delivered [CWC §10608.48(b)(2)], all will have adequate incentive to measure accurately as needed to serve that and other local purposes. DWR staff does not recommend this for the following reasons:

- Volumetric pricing is only one of the purposes of sufficient accuracy. The accuracy must also be sufficient from the State’s viewpoint to provide reliable reporting of aggregate farm-gate delivery data. For example, a supplier could set a volumetric price that is so low that both the supplier and its customers would accept measurement accuracy that the State would deem insufficient for aggregate reporting purposes.
- This framework is essentially the status quo - suppliers already measure water according to local conditions, cost-effectiveness, the suppliers’ accounting needs, and customer demands. Nevertheless, SBx7-7 specifically directs DWR to adopt a regulation.

Attachment 2 provides examples of similar performance standards developed by USBR and other western states. It is worth noting that, of the six states (Arizona, Colorado, Idaho, Kansas, Oregon, and Washington) surveyed for the 2003 CALFED report only one, Arizona, had numerical accuracy standards for points of irrigation water delivery by suppliers to individual customers. None of those surveyed required specific hardware devices (though some included examples of devices that would comply).

## 5.1 Range of Water Measurement Options

As stated in CWC §10608.48(i), DWR shall adopt regulations that provide for a range of options that agricultural water suppliers may use or implement to comply with the measurement requirements. Using the framework described above, DWR staff has developed a potential range of options that would ultimately be defined in the regulations promulgated by the Office of Administrative Law.

Water suppliers subject to the requirement shall use one of the following options to measure water delivered to customers. Two categories of options are shown. The first applies to measurement at the location at which control of delivered water is transferred from the supplier to the delivery point of individual customers. The second category applies to measurement upstream of the point at which control is transferred, and, under certain circumstances and with justification acceptable to DWR, allows the supplier to measure water at a point upstream of delivery to one or more customers.

**Comment [GD3]:** This misses a key point related to the degree of variability in accuracy among the population of devices. It is never the case that all devices, even ones of the same type and configuration, have the same accuracy, whatever the standard might be. For purposes of volumetric billing, the main issue is whether the variability in accuracy from farm gate to farm gate is sufficiently narrow to achieve sufficient equitability among customers in cost recovery. Given any range a supplier and its customers might agree to, there will also be an average error that may or may not be acceptable for aggregate reporting.

This leads to the idea of developing an average error standard for purposes of aggregate reporting and letting suppliers deal with the accuracy variability issue with their customers. As the cost/price of water increases, the range in acceptable variability is likely to narrow. If average accuracy is within acceptable bounds, what difference does it make to anyone other than the supplier and customers what the variability is?

Applying the accuracy standard to individual devices, which has been the thrust for a long time now, will surely force an average accuracy that is within the individual device standard. However, this is likely to impose unnecessary cost because achieving consistency is a strong cost driver.

**From:** Thad Bettner [\[mailto:tbettner@gcid.net\]](mailto:tbettner@gcid.net)

**Sent:** Tuesday, February 15, 2011 4:49 PM

**To:** Agriculture Water Use Efficiency; Davidoff, Baryohay

**Cc:** Ceppos, David M; Lewis Bair; Todd Manley; rid

**Subject:** Economic and Fiscal Impact Statement - Information Collection Process

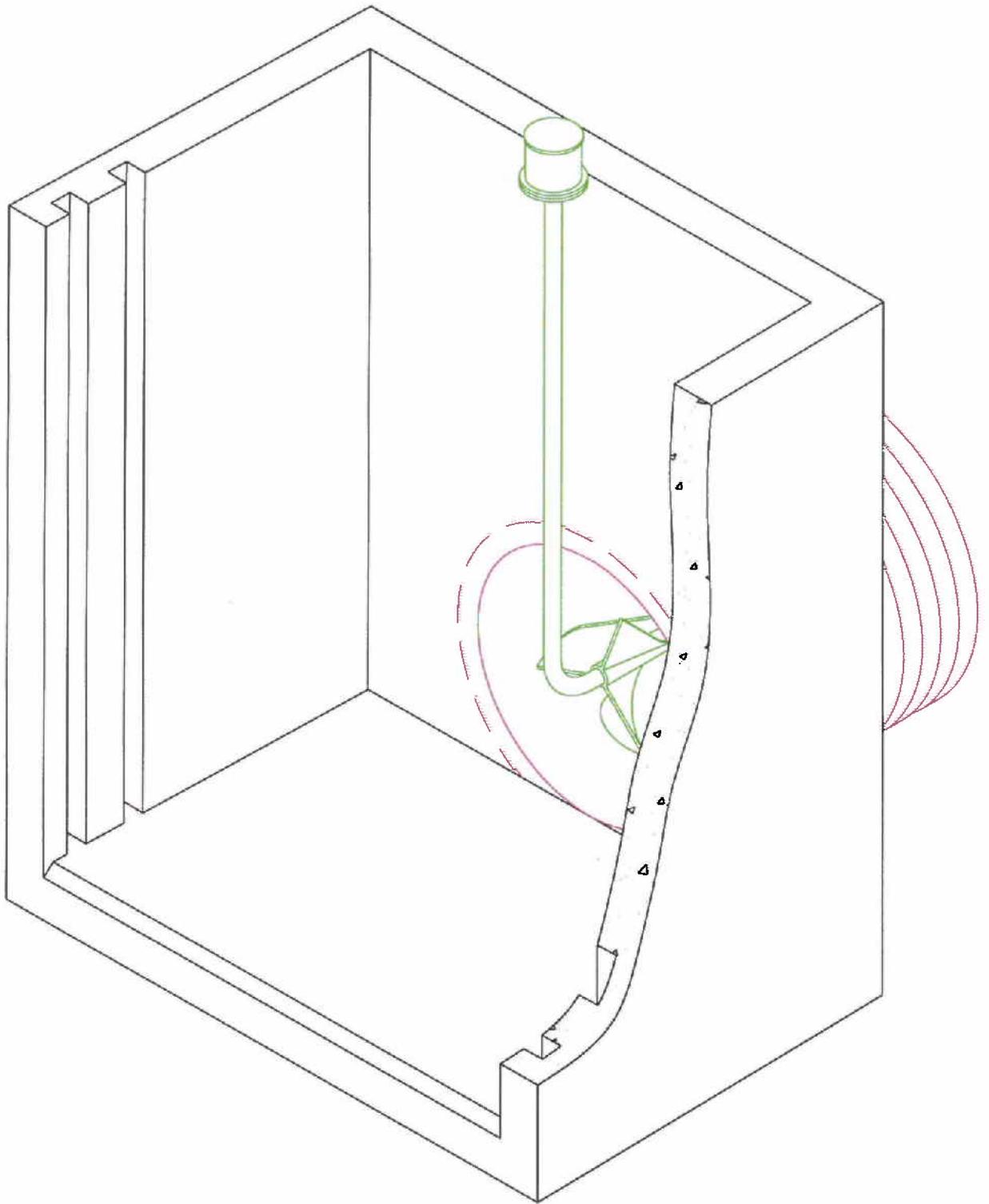
Baryohay,

Please find attached a cost estimate to comply with the legislation if we install meters at every turnout. The costs include initial capital costs for installations (note this assumes it all can be done now, there is no cost inflation included if this implemented over time..which it would based on our available maintenance season) and an annual cost which we have converted to a present value. Also, all labor costs are based on use of our own workforce. If we were to contract out this work at prevailing wage, the installation costs would be significant higher. We have include a couple drawings of the proposed installation.

The cost is about \$58.7 Million and would result in about a \$307 per acre cost.

---

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TYPICAL FLOW METER



TYPICAL FLOW METER

## COST ESTIMATE FOR FLOW METER INSTALLATION ON ALL GCID SYSTEM DELIVERIES

### CAPITAL COSTS

2,650 electronic flow meters @ avg. cost \$2,250	\$	5,962,500.00
Spare meter inventory (10% of 2,620 @ \$2,250)	\$	596,250.00
Twelve additional vehicles @ \$15,000 ea.	\$	180,000.00
Meter maintenance workshop	\$	100,000.00
Install 1,000 meter boxes @ \$1,600 ea.	\$	1,600,000.00
Install 1,200 meter boxes w/extension @ \$1,800 ea.	\$	2,160,000.00
Install 450 new turnouts (headwall, and meter box) @ \$8,000 ea.	\$	3,600,000.00
24 data loggers to track water usage @ \$2,500 ea.	\$	60,000.00
Change to new accounting and billing software	\$	80,000.00
Conduct engineering study & Proposition 218 mail ballot election to modify assessments	\$	500,000.00
Subtotal	\$	14,838,750.00
Add 25% Contingency	\$	3,709,687.50
<b>Total Capital Cost</b>	<b>\$</b>	<b>18,548,437.50</b>

### ANNUAL COSTS

Twelve additional meter readers and/or water operators @ \$72,000 (salary + benefits)	\$	864,000.00
One additional mechanic @ \$72,000 (salary + benefits)	\$	72,000.00
One additional office position for billing @ \$72,000 (salary + benefits)	\$	72,000.00
Meter maintenance	\$	25,000.00
Vehicle O&M 12 vehicles X 25,000 miles ea. X .51/mile	\$	153,000.00
Annual maintenance on meter system (assume 5% of total capital cost)	\$	891,171.00
Annual maintenance on accounting & billing software (20% of cost)	\$	16,000.00
Annual cost of biannual 218 mail ballot elections to increase assessments	\$	100,000.00
<b>Total Annual Cost</b>	<b>\$</b>	<b>2,193,171.00</b>

Capital Cost	\$	18,548,437.50
Net Present Value of 25 Year Annual Cost (assuming 3% discount rate)		\$38,190,010.54
<b>Net Present Value of Flow Meter Installation on all Deliveries in GCID</b>	<b>\$</b>	<b>56,738,448.04</b>

**Cost per Acre (NVP/153,502 acres)** **\$ 370**

Footnotes:

- (1) Meter and meter facility installation costs are based upon using district force account labor. If the installation schedule is compressed, then outside contractors would be necessary at prevailing wage, and a commensurate increase in cost.
- (2) Capital costs are in 2011 dollars and are not indexed for inflation.

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Re: ***Comments to Department of Water Resources Emergency Regulations Related to Agricultural Water Measurements***

To Whom It May Concern:

These comments are submitted on behalf of Richvale Irrigation District and Biggs-West Gridley Water District to the Department of Water Resources' proposed emergency agricultural water measurement regulations (Cal. Code Regs. [hereinafter "CCR"], Tit. 23, §§ 597, 597.1, 597.2, 597.3, 597.4). In short, the proposed regulations fail to satisfy the requirements of the Administrative Procedure Act; accordingly, the proposed regulatory action should be disapproved.

**Background**

Richvale Irrigation District ("Richvale") and Biggs-West Gridley Water District ("Biggs") are local public agencies formed and operating under Divisions 11 and 13, respectively, of the California Water Code. Under the proposed regulations, Richvale and Biggs are "agricultural water suppliers" as that phrase is defined in 23 CCR § 597.2, subdivision (a)(2). Thus, Richvale and Biggs will be required to implement the mandates of the proposed regulations, including measuring surface water that they delivery to *each* customer at a specified accuracy level.

Office of Administrative Law and  
Fethi Benjemaa

Re: Comments to Department of Water Resources Emergency Regulations Related to  
Agricultural Water Measurements

July 1, 2011

Page 2.

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## Discussion

### 1. Necessity/Defective Initial Statement of Reasons

The adoption, amendment or repeal of an emergency regulation is not subject to the procedure for adoption of regulations except as provided in sections 11346.1, 11349.5 and 11349.6 of the Government Code. Subdivision (b) of section 11349.6 states that the “office shall disapprove the emergency regulations...if it determines that the regulation fails to meet the standards set forth in section 11349.1...” Subdivision (a) of section 11349.1 provides that the office shall review all regulations under six standards: (1) necessity; (2) authority; (3) clarity; (4) consistency; (5) reference; and (6) nonduplication.

The necessity standard is defined by Government Code section 11349, subdivision (a), and 1 CCR section 10, subdivision (b). Generally, the agency must demonstrate “why” a regulation is needed and “how” this regulation fills that need. (*Ibid.*). The initial statement of reasons is the form whereby the agency attempts to satisfy the necessity standard.

Here, no initial statement of reasons was submitted with the proposed regulatory action. Nor does any of the supporting documentation satisfy the necessity standard. There is no explanation of the need for each new provision in the text made available to the public with the notice of publication. For this reason, the proposed emergency regulation violates the APA and should be disapproved.

### 2. Incorrect Procedure/Poor Clarity

The Department of Water Resources prepared an economic and fiscal impact statement (STD. 399) in support of the proposed emergency regulation. To assist in the completion of STD. 399, the Department of Finance has developed and requires regulatory agencies to comply with the State Administrative Manual (“SAM”) and particularly Chapter 6600, commencing with section 6601. The Department of Water Resources has failed to comply with the SAM in completing STD. 399.

SAM section 6601, subdivision (2), requires an estimate of the cost or savings to any state agency or local government. “Cost” includes direct and indirect costs. (SAM § 6602; Gov. Code § 11346.5, subd. (a)(6)). The costs imposed on local agencies must be identified and estimated when the imposition results in a reimbursable state mandate (SAM § 6606) and non-reimbursable local costs (SAM § 6608).

Office of Administrative Law and  
Fethi Benjemaa

Re: Comments to Department of Water Resources Emergency Regulations Related to  
Agricultural Water Measurements

July 1, 2011

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As already noted, Richvale and Biggs are local public agencies that are also “agricultural water suppliers” subject to the mandates of the proposed emergency regulation. The definition of “agricultural water supplier” contemplates suppliers, like Richvale and Biggs, that are “publicly...owned”. (23 CCR § 597.2, subd. (a)(2)). Inexplicably, however, STD. 399 states “No fiscal impact exists because this regulation does not affect any local entity or program.”

“A regulation shall be presumed not to comply with the ‘clarity’ standard if any of the following conditions exists: ... the language of the regulation conflicts with the agency’s description of the effect of the regulation...” (1 CCR § 16, subd. (a)(2)). Here, the language of the regulation applies to local public agencies, including the mandate to “measure surface water and groundwater that it delivers to its customers pursuant to the accuracy standards in this section.” However, the language of STD. 399 conflicts with the regulation by stating that the regulation does not “affect any local entity or program”.

The regulation clearly has an impact on local public agencies like Richvale and Biggs and, as such, must give a detailed summary and description of the fiscal effect on local government. Because the proposed regulatory action will have a cost impact on local government, STD. 399 is required to be submitted to the Department of Finance for concurrence in the cost estimate. (SAM § 6615). Finance’s concurrence must be obtained *before* submitting the record to OAL.

### 3. Incorrect Procedure/Consistency

“‘Consistency’ means being in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or other provisions of law.” (Gov. Code § 11349, subd. (d)). In the section entitled Estimate of Costs or Savings of the Notice of Proposed Emergency Rulemaking, the Department of Water Resources states that “Costs to agricultural water suppliers associated with complying with the regulation will be passed on to their customers (i.e., farmers).”

However, local public agencies like Richvale and Biggs are subject to Proposition 218 (Cal. Const., Art. XIII D). Proposition 218 divests local public agencies of authority to impose or increase general taxes, assessments and fees without voter approval. Richvale, Biggs and other local public agencies that are agricultural water suppliers cannot pass through costs associated with complying with the regulation through to their customers without complying with Proposition 218. It is important to note that Richvale and Biggs’ customers could reject an assessment or increased fee, yet Richvale and Biggs will still be subject to the regulation’s mandates.

Office of Administrative Law and  
Fethi Benjemaa

Re: *Comments to Department of Water Resources Emergency Regulations Related to  
Agricultural Water Measurements*

July 1, 2011

Page 4.

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The Notice of Proposed Rulemaking must be consistent with applicable law, including Proposition 218. The erroneous assumption that local public agencies can simply pass through the costs of the regulation through to their customers is inconsistent with Proposition 218. The regulation should be disapproved for being inconsistent and in conflict with existing provisions of law.

**Conclusion**

For the reasons set forth above, OAL should disapprove the Department of Water Resources' proposed regulatory action.

Very truly yours,

**MINASIAN, MEITH, SOARES,  
SEXTON & COOPER, LLP**

By: 

**DUSTIN C. COOPER**

DCC:aw

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Re: *Comments to Department of Water Resources Proposed Regulations Related to  
Agricultural Water Measurements*

To Whom It May Concern:

These comments are submitted on behalf of Richvale Irrigation District and Biggs-West Gridley Water District to the Department of Water Resources' proposed agricultural water measurement regulations (Cal. Code Regs. [hereinafter "CCR"], Tit. 23, §§ 597, 597.1, 597.2, 597.3, 597.4). In short, the proposed regulations fail to satisfy the requirements of the Administrative Procedure Act; accordingly, the proposed regulatory action should not be approved until the deficiencies noted below are addressed.

#### Background

Richvale Irrigation District ("Richvale") and Biggs-West Gridley Water District ("Biggs") are local public agencies formed and operating under Divisions 11 and 13, respectively, of the California Water Code. Under the proposed regulations, Richvale and Biggs are "agricultural water suppliers" as that phrase is defined in 23 CCR § 597.2, subdivision (a)(2). Thus, Richvale and Biggs will be required to implement the mandates of the proposed regulations, including measuring surface water that they delivery to *each* customer at a specified accuracy level.

Richvale and Biggs previously submitted comments to the Department's emergency regulation on July 1, 2011, but those comments and the deficiencies outlined therein have not been addressed or responded to. These comments are submitted in addition to the earlier comments.

Office of Administrative Law and  
Fethi Benjemaa

Re: Comments to Department of Water Resources Proposed Regulations Related to  
Agricultural Water Measurements

September 6, 2011

Page 2.

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### Discussion

1. The Regulation Results in a Local Mandate; It is Inconsistent with Proposition 218

Government Code section 11346.5, subdivision (a)(5), requires a determination as to whether a mandate is imposed on local agencies that may require reimbursement pursuant to section 17500 et seq. STD. 399 claims that “No fiscal impact exists because this regulation does not affect any local entity or program.” The California Regulatory Notice Register 2011, Vol. No. 29-Z, page 1171, states “None” in answer to whether there is a cost to any local agency. Yet the Cost Analysis for Proposed Agricultural Water Measurement Regulation in Support of Economic and Fiscal Impact Statement provides at page 2:

Costs of the regulation would fall directly on agricultural water suppliers, the vast majority of which are special districts (public agencies). They, in turn, will recover the costs through their water charges and assessments, so all costs would immediately be passed on to the customers (nearly all being private businesses and individuals.

This reasoning is deficient under the “consistency” standard of the APA.

“‘Consistency’ means being in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or other provisions of law.” (Gov. Code § 11349, subd. (d)). The assumption that local public agencies like Richvale and Biggs can simply “pass through” the costs of complying with the regulation is inconsistent with and violates Proposition 218.

Local public agencies like Richvale and Biggs are subject to Proposition 218 (Cal. Const., Art. XIII D). Proposition 218 divests local public agencies of authority to impose or increase general taxes, assessments and fees without voter approval. (*See* Cal. Const., Art. XIII D, §§ 4, 6). Richvale, Biggs and other local public agencies that are agricultural water suppliers cannot pass through costs associated with complying with the regulation through to their customers without complying with Proposition 218.<sup>1</sup> It is important to note that Richvale’s and Biggs’ customers could reject an assessment or increased fee to pay for the costs of compliance with the regulation, yet Richvale and Biggs will still be subject to the regulations’ mandates.

Because the regulations result in costs imposed on local agencies, estimates must be prepared in accordance with Department of Finance instruction. (Gov. Code § 11346.5, sub. (a)(6); State Administrative Manual §§ 6601-6616). These estimates were not prepared.

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<sup>1</sup> Complying with Proposition 218 is itself a cost upon local agencies, further demonstrating the inconsistency with the Department’s claim that there are no costs imposed upon local agencies.

Office of Administrative Law and  
Fethi Benjemaa

Re: *Comments to Department of Water Resources Proposed Regulations Related to  
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In sum, the Notice of Proposed Rulemaking must be consistent with applicable law, including Proposition 218. The erroneous assumption that local public agencies can simply pass through the costs of the regulation through to their customers is inconsistent with Proposition 218. The regulation should be disapproved (1) for being inconsistent and in conflict with existing provisions of law and (2) for failing to prepare estimates in accordance with instructions from the Department of Finance.

2. Incorrect Procedure/Poor Clarity

State Administrative Manual section 6601, subdivision (2), requires an estimate of the cost or savings to any state agency or local government. “Cost” includes direct and indirect costs. (SAM § 6602; Gov. Code § 11346.5, subd. (a)(6)). The costs imposed on local agencies must be identified and estimated when the imposition results in a reimbursable state mandate (SAM § 6606) and non-reimbursable local costs (SAM § 6608).

As already noted, Richvale and Biggs are local public agencies that are also “agricultural water suppliers” subject to the mandates of the proposed emergency regulation. The definition of “agricultural water supplier” contemplates suppliers, like Richvale and Biggs, that are “publicly...owned”. (23 CCR § 597.2, subd. (a)(2)). Inexplicitly, however, STD. 399 states “No fiscal impact exists because this regulation does not affect any local entity or program.”

“A regulation shall be presumed not to comply with the ‘clarity’ standard if any of the following conditions exists: ... the language of the regulation conflicts with the agency’s description of the effect of the regulation...” (1 CCR § 16, subd. (a)(2)). Here, the language of the regulation applies to local public agencies, including the mandate to “measure surface water and groundwater that it delivers to its customers pursuant to the accuracy standards in this section.” However, the language of STD. 399 conflicts with the regulation by stating that the regulation does not “affect any local entity or program”.

The regulation clearly has an impact on local public agencies like Richvale and Biggs and, as such, must give a detailed summary and description of the fiscal effect on local government.

3. Failure to Obtain Department of Finance’s Concurrence to STD. 399 (Fiscal Impact)

Section 6615 of the State Administrative Manual requires concurrence from the Department of Finance in the estimate of the fiscal impact of a proposed regulation on governmental agencies when the “adoption, amendment, or repeal of a regulation results in local

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agency costs of savings, in state agency costs or savings, or in other nondiscretionary instances such as local/state revenue increases or decreases which must be depicted on the STD. 399....”

With the proposed regulation, it is undisputed that costs will be imposed on agricultural water suppliers, the predominant majority of which are local agencies (see section 1, above). Accordingly, the Department must obtain the concurrence of the Department of Finance in its findings and conclusions contained in STD. 399.

4. Incorrect Procedure/No Alternatives Statement and No Consideration of Alternatives Proposed

Government Code section 11346.5, subdivision (a)(13), requires a statement that the Department has determined that the regulation is the least burdensome reasonable alternative. The record contains no such statement; indeed, the Department has ignored reasonable and less costly alternatives presented by Biggs, Richvale and other interested parties.

Neither the Economic and Fiscal Impact Statement, nor any other document in the record, includes the statement required by section 11346.5, subdivision (a)(13). The Economic and Fiscal Impact Statement admits that no benefit or cost analysis was conducted for alternatives making it unknown if the regulation is the least burdensome reasonable alternative.

An alternative that Richvale and Biggs have suggested, but that the Department has ignored, is permitting supplier-wide averaging of farm-gate deliveries. Paragraphs (1) and (2) of Water Code section 10608.48, subdivision (b), requires suppliers' reporting of aggregated farm-gate water delivery and adopting a volumetric water pricing structure. An alternative of averaging the farm-gate deliveries that, for example, is accurate on average within 12% by volume satisfies the Legislature's goals when adopting Water Code section 10608.48 and is also less burdensome on suppliers. Aggregated farm-gate deliveries may still be reported and customers may still be charged for water on a volumetric basis; errors, if any, on an individual farm-gate measurement will be remedied either by the customer (if they believe the volumetric charge is too high) or by the Board of Directors or decisionmaking body of the supplier (if it believes the volumetric charge is too low).

The advantages of this alternative are numerous, including: it is less costly and onerous to the water supplier; allows for some outlier farm-gate measurements, while ensuring that most (i.e., the average) devices are reasonably accurate; and, most importantly, allows for a less burdensome reasonable alternative. In contrast, the regulation in its current form that requires individual device accuracy is unnecessarily strict and does not correspondingly meet the Legislature's goals better than the alternative proposed by Richvale and Biggs.

Office of Administrative Law and  
Fethi Benjemaa

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At minimum, Richvale's and Biggs' alternative deserves consideration from the Department and a response explaining how the regulation was amended to accommodate the alternative or explaining the reasons for rejecting the alternative. (See Gov. Code § 11346.9, subd. (a)(3)). To date, the Department has ignored and refused to respond to Richvale's and Biggs' proposed alternative.

5. Inadequate Initial Statement of Reasons – No Statement of Reasons for Mandating Specific Technologies or Equipment

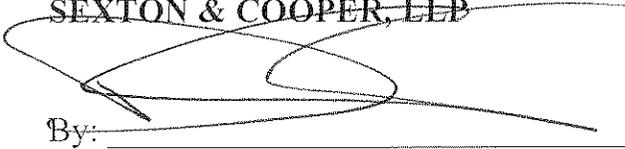
The proposed regulation requires the use of specific technologies or equipment, namely, water measurement devices that measure water within 12% accuracy by volume (for existing devices), 10% by volume (new device with non-laboratory certification) or 5% by volume (new device with laboratory certification). Despite this requirement, the Initial Statement of Reasons does not include the reason(s) why the specific technology or equipment is required, as mandated by Government Code section 11346.2, subdivision (b)(1).

**Conclusion**

The Department should amend the proposed regulation to correct the deficiencies and address the alternative noted above.

Very truly yours,

**MINASIAN, MEITH, SOARES,  
SEXTON & COOPER, LLP**

By: 

**DUSTIN C. COOPER**

DCC:aw

cc: Biggs-West Gridley Water District  
Richvale Irrigation District

**DIRECTORS**  
*LYLE JOB*  
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## **RICHVALE IRRIGATION DISTRICT**

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March 13, 2012

Mr. Manucher Alemi  
Chief, Water Use and Efficiency Branch  
Department of Water Resources  
901 P Street  
Sacramento, California 95814

**RE: Proposed Revision of Draft Measurement Regulation to Comply with Necessity Standards According to Government Code Section 11349.1**

Dear Manucher:

As a member of the Agricultural Stakeholder Committee and A2 Subcommittee, I contributed substantially to development of the draft agricultural water measurement regulation. One of the points I (and other ASC members) repeatedly emphasized, through testimony to the California Water Commission (CWC) as well as through comments at ASC and A2 meetings, was the lack of any need for the accuracy standards to apply to each individual measurement device to effectuate the purpose of the statute. Instead, I stated that standards applicable to average accuracy of multiple devices would be sufficient to effectuate the statute's purpose, while also decreasing the burden and expense on agricultural water suppliers. Unfortunately, this suggestion was ignored, without adequate explanation, by the Department of Water Resources (DWR or Department) and the regulation was drafted to apply to individual measurement device accuracy.

DWR's regulatory action was disapproved by the Office of Administrative Law (OAL) earlier this month, based in part on DWR's failure to comply with necessity standards in Government Code section 11349.1. Consequently, DWR will need to fully articulate its reasons for adopting the specific provisions in the regulation and provide opportunity for the public to comment on the Department's reasoning. The purpose of this letter is to present my rationale and supporting evidence to demonstrate that the regulation can allow aggregated farm gate delivery measurements while still satisfying the purposes of the statute. If DWR disagrees with this rationale and supporting evidence, it must satisfy the necessity standard by demonstrating why the more burdensome and expensive individual accuracy standards are preferred.

### **Statutory Requirements and Regulatory Need**

For reference, §10608.48(b) of the California Water Code states that:

*"Agricultural water suppliers shall implement all of the following critical efficient management practices:*

*(1) Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10 and to implement paragraph (2).*

*(2) Adopt a pricing structure for water customers based at least in part on quantity delivered.”*

(Underlining added). For further reference, §531.10(a) of the California Water Code requires that:

*“(a) An agricultural water supplier shall submit an annual report to the department that summarizes aggregated farm-gate delivery data, on a monthly or bi-monthly basis, using best professional practices.”*

Based on this language from the statute, the two questions help to illustrate that an aggregated farm gate measurement satisfies the purposes of the Water Code provisions:

- 1) What level of measurement accuracy is “sufficient” for reporting summarized, aggregated farm-gate delivery data on a monthly or bi-monthly basis using best professional practices?
- 2) What level of measurement accuracy is “sufficient” for adopting a pricing structure based at least in part on quantity delivered?

#### **Sufficient Accuracy for Reporting Summarized Aggregated Farm-Gate Delivery Data**

Measurement of any type involves deviation or error in the measured value relative to a standard measurement. Errors can be systematic, so that when they are aggregated (or summed) they tend to accumulate. Or, they can be random, meaning that when they are summed, the errors tend to cancel each other. To illustrate this point, consider the data presented in Table 1. This data was collected by a registered professional engineer from actual farm delivery gates in Richvale Irrigation District (RID) during the 2011 irrigation season using best professional practices. For each of 33 measurements conducted, the table presents the flow as measured by a weir at the farm gate, flow measured by a SonTek FlowTracker (acoustic Doppler measurement device, regarded as the standard measurement), the flow difference and the percentage accuracy.

It can be seen that the accuracy ranges between -17% and +75% among individual weirs (devices) while the average accuracy for all devices is +4.9%. Furthermore, when the measurements are aggregated and compared, the weighted average accuracy is +1.7%. This illustrates that, for this sample of delivery gates, average accuracy is very high (and certainly within acceptable tolerances for aggregate reporting), despite the fact that some individual devices have large measurement error. This is because, in this sample, which is considered to be representative of district-wide conditions in RID, measurement errors tend to be random and cancel each other out. Similar data collected for two other Sacramento Valley water suppliers and by Imperial Irrigation District reveal similar findings.

DWR should determine the level of accuracy needed in the aggregated farm data to meet the Department’s purposes, explain the rationale for that level of accuracy, and then develop a regulation applicable to the aggregated values. The data presented in the Table illustrate that it is not necessary for each and every farm delivery measurement device to achieve an accuracy standard in order for aggregate water measurement to be very good.

It is also important to consider the cost and burden on agricultural water suppliers of the two approaches. If the  $\pm 12\%$  accuracy standard applicable to existing measurement devices in the draft regulation were adopted, nearly 20% of RID’s roughly 300 farm delivery gates would need to be improved.

**Table 1. Comparison of Weir Measurement to Standard Measurement at 33 Farm Delivery Gates in**

**Richvale Irrigation District during the 2011 Irrigation Season**

Customer Delivery Measurement No.	Farm Gate Weir Flow (cfs)	Standard Flow (cfs)	Flow Difference (cfs)	Accuracy
1	8.0	8.3	-0.3	-3.9%
2	18.0	15.3	2.8	18.1%
3	6.6	6.3	0.3	4.3%
4	1.1	0.7	0.5	74.6%
5	2.2	2.5	-0.3	-11.6%
6	6.4	6.6	-0.2	-2.7%
7	4.7	5.7	-1.0	-17.2%
8	7.3	8.3	-0.9	-11.4%
9	2.4	2.5	-0.1	-2.6%
10	1.4	1.3	0.1	6.9%
11	3.0	3.1	-0.1	-4.6%
12	3.9	3.9	0.0	-1.0%
13	6.1	6.2	-0.1	-1.2%
14	23.1	22.5	0.6	2.5%
15	3.6	3.7	-0.1	-1.8%
16	4.5	4.7	-0.2	-3.5%
17	2.3	2.3	0.0	-1.5%
18	3.6	3.5	0.2	4.4%
19	6.3	6.2	0.1	1.5%
20	7.5	7.6	-0.1	-1.3%
21	2.4	2.2	0.2	7.9%
22	4.3	4.7	-0.5	-9.6%
23	2.7	2.7	0.0	0.6%
24	1.9	1.6	0.3	17.3%
25	3.1	2.9	0.2	8.6%
26	4.3	4.2	0.1	2.5%
27	2.8	2.5	0.3	11.7%
28	5.0	4.8	0.2	3.4%
29	5.7	5.6	0.0	0.6%
30	6.9	7.0	-0.1	-1.5%
31	2.4	2.0	0.4	18.1%
32	1.6	1.1	0.5	48.3%
33	2.1	2.0	0.1	5.3%
Minimum	1.1	0.7	-1.0	-17.2%
Maximum	23.1	22.5	2.8	74.6%
Average	5.1	5.0	0.1	4.9%
Aggregated Values	167.4	164.6	2.8	1.7%
Number of measurements failing draft $\pm 12\%$ accuracy standard				6
Percentage of measurements failing draft $\pm 12\%$ accuracy standard				18%

Using a conservative cost estimate of \$10,000 per gate to implement improvements to comply with the draft  $\pm 12\%$  measurement standard, the capital cost would be \$600,000, or \$20 per acre averaged over RID's approximately 30,000

irrigated acres. It is also worth noting that RID would need to successfully conduct a Proposition 218 process to gain landowner approval of any rate increase needed to cover these costs. Based on discussions with various landowners in RID, my prediction is that such an initiative would fail. If the Proposition 218 process were to fail, RID would be stuck complying with the mandates of the regulation, while also not having any available funding source to comply.

### **Sufficient Accuracy for Adopting a Pricing Structure Based at Least in Part on Quantity Delivered**

While some agricultural water suppliers, including RID, do not currently charge for water volumetrically, many suppliers have for decades employed volumetric water charges using a variety of pricing structures. Many of these suppliers do not incorporate individual accuracy standards into their volumetric pricing scheme; instead, these suppliers rely on customer/supplier dialog to ensure accurate measurements and to identify and correct outliers.

To address the question of “sufficient” measurement accuracy for purposes of volumetric water pricing, it is helpful to consider (i) how suppliers who use volume based pricing measure water deliveries and (ii) whether they have adopted measurement accuracy standards. What this reveals, not surprisingly, is that supplier measurement programs are highly varied, reflecting that they have been designed according to policy direction from locally elected governing boards to meet local needs and purposes. However, we are aware of no supplier with a volumetric measurement program that has adopted a numeric measurement standard for administration of its pricing program. This clearly indicates that successful volume-based pricing structures do not require a numeric accuracy standard.

Because measurement cost generally increases with increasing measurement accuracy, all local governing boards are faced with the practical question of how good is good enough? Or, in other words, how much are customers willing to pay in order to implement a water measurement program? This question is generally addressed through processes of appeal initiated by the water customers or the supplier. If a customer perceives that measurement is not fair or equitable (i.e., it is an outlier), he can appeal to the supplier for a validation measurement and, depending on the finding, the supplier and customer negotiate a solution. All suppliers have processes for conducting such appeals. Naturally, such a process tends to focus on the largest outliers or farm gates with the highest measurement error. Thus, using the data presented in Table 1 as an example, one would expect that customers would appeal measurements like #4 and #32, which indicate that the customer is being significantly overcharged.

Conversely, the supplier may initiate delivery measurement validation in cases where it is believed that the customers may be undercharged. The purpose in doing this is to ensure that all water delivered to customers is charged for, and that charges accurately reflect the quantity of water delivered. One would expect measurements like #5, #7 and #8 to attract the supplier’s attention.

With customers focused on avoiding overcharging and suppliers concerned with undercharging, the combined effect is that the largest positive and negative measurement errors are corrected so that sufficient accuracy is achieved and maintained. Importantly, by addressing the largest outliers, these processes tend to improve the accuracy of the aggregated farm delivery measurement over time.

The Water Code does not necessarily require numeric measurement accuracy standards. Rather, it requires sufficiently accurate water measurements that allow the supplier to adopt a pricing structure based “at least in part on quantity delivered”. (Water Code § 10608.48(b)(2)). My recommended approach satisfies the spirit and letter of the Water Code. There are built in incentives for suppliers and customers to define “sufficient accuracy” for their own conditions and purposes. Requiring the accuracy standard to apply to each farm gate unnecessarily and dramatically increases the cost of compliance. However, an accuracy standard applied to aggregate reporting as proposed in the preceding section would satisfy the requirements of the Water Code; would be less burdensome and less expensive to implement; and would ensure that large aggregate measurement errors in the total quantity of water being delivered and charged to customers are corrected and avoided.

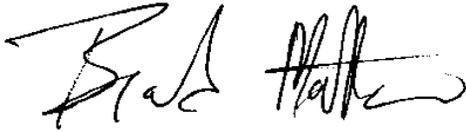
### **Summary**

In reconsidering the measurement regulation and in revising its Statement of Reasons as called for by OAL’s disapproval, specifically regarding compliance with necessity standards, it is strongly urged that DWR revise the regulation so that an accuracy standard would be applicable to aggregated farm-gate delivery data and not individual

measurement devices. Such a standard would ensure that the purpose of the statute is effectuated without imposing unnecessary costs on water suppliers.

Please feel free to contact me should you have any questions or want to discuss my recommendation.

Sincerely,

A handwritten signature in black ink, appearing to read "Brad Mattson". The signature is fluid and cursive, with a long horizontal stroke at the end.

Brad Mattson  
General Manager  
Richvale Irrigation District

cc: Mark Cowin, Director, Department of Water Resources  
Kamyar Guivetchi, Chief, Division of Statewide Integrated Water Management, Department of Water Resources  
California Water Commission Members  
Todd Manley, Northern California Water Association  
David Bolland, Association of California Water Agencies

March 14, 2012

Fethi Benjemaa  
Department of Water Resources  
901 P Street, Suite 313A  
Sacramento, CA 95814  
Jemaa@water.ca.gov

**SUBJECT: Response to Notice of Modifications to the Text of Proposed  
Agricultural Water Measurement Regulation**

Dear Mr. Benjemaa,

As you know, we have actively participated throughout the process of developing the agricultural water measurement regulation mandated by SB X7 7 and have attempted to be proactive and supportive of the Department of Water Resources' (Department) efforts. The February 8, 2012 decision by the Office of Administrative Law (OAL) raised concerns similar to those we have raised in the past. The Department's response to OAL's comments does nothing to change the regulation from being a very expensive and essentially non-implementable program that does not address the requirements established by the legislation. Our comments are summarized below.

**The Department Failed to Establish Sufficient Necessity in the Initial Statement of Reasons**

In comment section (C) of OAL's decision, it stated the following:

“The Initial Statement of Reasons provided with this regulatory action is inadequate. For the most part, it describes "what" the regulations do, not "why" they are needed. The Initial Statement of Reasons fails to provide the public with the rationale for the determinations by the Department as to why the specific regulatory changes are needed to carry out the purpose for which they are proposed. This vital information should have been made available to the public during the rulemaking process so that the public is informed of the basis of the proposed action and can comment knowledgably during the public comment period.”

In the attached December 13, 2010 letter from Glenn-Colusa Irrigation District (GCID) to the Department, it asked the same questions of why or what are the purposes of the regulation. At the close of the letter, five actions were offered that the Department should pursue; none of which have been considered. In fact the first action from the December 13 letter, stated below, asks the “why” question. This appears to be consistent with the concern raised by OAL.

“DWR should develop a Policy defining the purpose of measurement and pricing as it pertains to the legislation. If the purpose is conservation and water use efficiency, the Policy should clearly articulate how measurement and pricing will result in conservation and efficiency, and additionally, how quantifying levels of accuracy will meet that Policy directive.”

Unfortunately, DWR’s response to the OAL decision does not resolve the necessity issue as required by OAL as cited on page 7 of the decision:

“It is statutorily mandated that the Department articulate its reasons for adopting the specific regulatory provisions for each section so that the public has an opportunity to comment on the process and the reasoning of the Department. The Department will need to introduce a statement of reasons into the rulemaking file that resolves the necessity issues by making the document available during a 15-day notice of availability pursuant to Government Code section 11347.1.”

Following the Department’s resolution of the issues contained in the OAL decision, we firmly believe the regulation will likely require some further revisions, and perhaps relaxation of the requirements since they appear overly burdensome, expensive and inconsistent. Finally, we believe the regulation will require an additional public comment period.

### **Clarity Standard Related to “Cost-Effectiveness”**

In comment section (A) on page 3 of OAL’s decision, it stated the Department was inconsistent in describing the applicability of cost-effectiveness of water measurement. The Department has stated the legislation was silent on cost-effectiveness; therefore; staff determined cost of measurement was not relevant and could not be included in this regulation. In other words because the legislation was silent there was not an allowance for consideration.

However, it is interesting that the Department has exercised complete freedom and liberty to take two words from the legislation, “sufficient accuracy,” to create a 10 page regulation. Certainly, the Department can make a decision to include cost effectiveness as a factor of what “sufficient accuracy” really means. If the legislation stated “absolute accuracy”, or “without error” then perhaps cost would have no meaning and agencies would be required to spend whatever is necessary to measure a turnout. However, the legislation says accuracy must be "sufficient," (i.e. enough, adequate, acceptable, agreeable, satisfactory) such that water agencies can report a single aggregated volume from all turnouts on a form (which the Department has stated it will not use). To state that the cost of measurement should be unlimited in order to write a single value on a report that the Department will not use is an abuse of agency funds, and would be an abuse of State funds if this were implemented by agencies smaller than 25,000 acres for which the State would need to provide grant funding to implement.

Additionally, implementation of this regulation will require that agencies expend hundreds of millions of dollars, for which the agencies will need to increase water rates or assessments from their constituents. As the Department understands and OAL should realize, water agencies cannot increase these rates unless the increase is consistent with Proposition 218 and approved by voters. If cost-effectiveness is not included in this regulation and measurement is too expensive, voters will not approve increased rates to comply with this regulation.

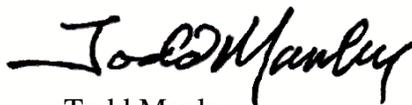
To not address the Proposition 218 issue and/or placing an agency attempting to comply in direct conflict with constituents and voters is not consistent with decision making and flexibility the Department has as it relates to interpreting the legislature's "sufficient accuracy" or "range of options" allowance.

In addition, the Department's attempt to address the concerns raised by OAL regarding Sec. 597.3(b)(1)(B), which OAL was able to describe by underlining two phrases, has ballooned into 15 separate changes to this section. The numerous changes and additions of text have done nothing to clarify the regulation and have increased the level of confusion for the parties responsible for implementation.

Given the significance of the issues raised in this letter and by OAL, an appropriate and legal resolution must be made to ensure the useful implementation of an agricultural water measurement program.

Please contact Todd Manley, Northern California Water Association at 916-442-8333 if you have questions regarding these comments.

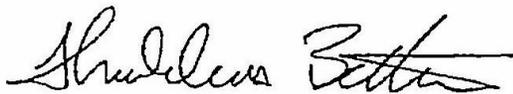
Sincerely,



Todd Manley  
Northern California Water Association



Ted Trimble  
Western Canal Water District



Thad Bettner  
Glenn-Colusa Irrigation District



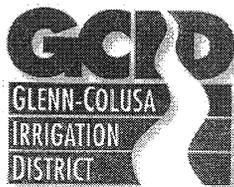
Tim O'Halloran  
Yolo County Flood Control &  
Water Conservation District



Brad Mattson  
Richvale Irrigation District



Lewis Bair  
Reclamation District 108



December 13, 2010

Manucher Alemi  
California Department of Water Resources  
Water Use Efficiency Branch  
SBX7-7 Program  
P.O. Box 942836  
Sacramento, CA 94236-0001

SUBJECT: Enactment of Emergency Regulations

Dear Manucher,

The intent of this letter to you, your staff, and Department of Water Resources' (DWR) policy makers is to provide some context to the water measurement regulations required pursuant to Paragraph 10608.48(i)(1) of SBX7-7 and attempt to offer a path to move forward to comply with this legislation.

From our perspective, the Ag Stakeholder Committee (ASC) process led by DWR has been very focused on specific measurement devices and an accuracy standard that will severely restrict a range of options that is required by the legislation. In the absence of new information, it seems evident that next week we will simply be discussing what DWR has decided upon in terms of the device and accuracy. Obviously, it would have been easier for all of us if the legislature would have just written those specifics into SBX7-7; however, the legislature did not and, in fact, provided for flexibility for measurement. We are hopeful that DWR, the Water Commission, and others will consider carefully the language of the legislation, as well as its intent prior to adopting regulations for measurement.

Our view is that the legislation is not intended to simply measure water for the sake of measurement, rather the intent is that water supplies are used efficiently and conserved where possible. This ASC process must focus on those broader policy implications. Unfortunately and understandably, DWR has focused on the measurement debate in the ASC meetings to comply with dates in the legislation; however, as a result, we have lost the context of measurement to pricing and efficiency, which need to be included in order to have a balanced discussion on measurement methods and accuracy.

To date, I have heard of three purposes as to why to measure:

1. Because the legislation says so
2. It is an efficient water management practice
3. To implement volumetric pricing based, in part, on quantity delivered

**DIRECTORS**

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& Dunn

Unfortunately, until a determination is made for the ultimate purpose and need for measurement, it will be impossible to arrive at a measurement solution and a range of options as mandated by the legislation. Below, I have outlined some perspectives associated with the above three purposes.

Measurement – Because the legislation says so

We have heard on several occasions that measurement is required because the legislature passed SBX7-7. No one will disagree that we need to comply with the law; however, DWR and the stakeholder members must agree that the legislation is open to interpretation of what is actually required. If it were not, we would not be having this discussion. Questions such as “aggregate turnout deliveries” and “range of options” within the legislation allow for ASC members on all sides to have differing opinions on how to implement measurement. Thus, to simply point at the legislation and state “just do it,” is a disservice to all, and we must move on to the other two remaining purposes of measurement and, in essence, arrive at a “policy” as to why we are measuring and what information is needed as to device and performance standards to meet that overall policy. DWR has the ability to set policy as it pertains to the “end goal” of measurement and should endeavor to do so.

Yet, even while this legislation is in the process of being implemented, some are already calling for “additional conservation measures, such as minimum performance criteria for management and maintenance by agricultural water suppliers; water application and consumption rates for principal crops and soils; and development of an operational definition of water “waste” that can establish a contemporary floor for acceptable water management.”

([http://switchboard.nrdc.org/blogs/bnelson/a\\_water\\_agenda\\_for\\_governor\\_br\\_1.html](http://switchboard.nrdc.org/blogs/bnelson/a_water_agenda_for_governor_br_1.html))

If, in fact, the above “conservation” measures are the unspoken purposes of measurement, then we should have that discussion from a policy standpoint on meeting these future information and regulatory needs, and not be frustrated by this process in which we are attempting to institute measurement for the sole purpose of implementing volumetric pricing pursuant to SBX7-7.

Measurement – Efficient Water Measurement Practice

*Section 10608.48(b). Agricultural water suppliers shall implement all of the following critical efficient management practices:*

- (1) Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10..... (which states that an agricultural water supplier shall submit an annual report to the department that summarizes aggregated farm-gate delivery data, on a monthly or bi-monthly basis, using best professional practices).*

Water agencies have, and will continue to expand, active and robust measurement throughout their distribution systems including main diversion points, laterals, sublaterals, spill points, relift stations, etc. In fact, water agencies have made significant investments in canal automation, measurement reports, conjunctive use programs, conveyance

improvements, and reuse facilities all for the purpose of managing water supplies under a broad range of hydrology, delivery constraints, and ecosystem needs. As reported in *DWR's Bulletin 160*, ag water efficiency in the state is very high and, in terms of conserving water that is truly wasted, there are few opportunities remaining, with most recoverable water being used for other beneficial uses.

If DWR wants to know the volume that water agencies deliver to their respective customers in order to calculate efficiency, which measurements are appropriate or, better said, where should "aggregated farm gate delivery" be calculated? For example, if an agency has a main diversion point on a river, then compares that to the total of all laterals, then compares that to the total of all farm gate deliveries, which "aggregated data" is correct, or which number would be used to calculate an "efficient water measurement practice." As an example, the California Aqueduct uses Venturi meters (known to have measurement error exceeding 20%) to deliver water to water agencies, who then have propeller meters (6% manufacturer accuracy) on individual turnouts. From an efficient water measurement practice standpoint, which device(s) or total use is appropriate for efficiency calculations? Both are aggregated volumes, but which should be reported under 531.10?

Aside from the issue of where measured data should be aggregated and how to comply with 531.10 reporting, the question then becomes will accurate water measurement equate to efficient water use? No, it will not. To date, not one person in the stakeholder group has stated that water measurement, in and of itself, will result in water conservation or efficient water use. If measurement is tied to pricing, perhaps there could be some reduction of applied water (though not necessarily water conservation) at the field level but, to date, there has been no comprehensive discussion of measurement and pricing. For example, growers do not look at a meter and determine how much water to apply to a field; they use information such as moisture sensors, satellite ET information, plant tissue samples, reuse, or use water for dual purposes including environmental enhancement, etc. to determine delivery and use, but never by setting a flow rate on a meter. A meter is simply used to calculate the cost associated with that water use.

I raise this issue because there seems to be significant effort and concern to arrive at an extremely high level of accuracy at the farm gate, yet other factors must be evaluated or, better said, DWR has left other factors associated with measurement unaddressed, including pricing and basin efficiencies. If DWR is looking solely at farm gate measurement and accuracy as a justification that it will increase water use efficiency, that makes little sense. For example, if a grower has a crop that requires 4.0 acre-feet/acre, a device that is 6% variable will read 0.24 acre-feet/acre high or low, another device that is 15% variable will read 0.60 acre-feet/acre high or low. The question is, for that additional 0.36 acre-feet/acre (.60 -.24) of more accuracy, will the grower take an action to conserve water or be more efficient?

Yet, in the context of the ASC meetings, we have been looking at increased accuracy in the context of measurement only and trying to develop regulations that DWR can adopt, and this is a disservice to the process. It is not until the measurement conversation is

paired with pricing, or basin efficiencies, does the accuracy of measurement then become relevant.

Measurement - To implement volumetric pricing based in part on quantity delivered  
*Section 10608.48(b): Agricultural water suppliers shall implement all of the following critical efficient management practices:*

- (1) Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10 and to implement paragraph (2).*
- (2) Adopt a pricing structure for water customers based at least in part on quantity delivered.*

It has been several years since AB1404 passed and, to date, DWR has not implemented the reporting requirements in 531.10 that was a provision of AB1404, nor have other entities demanded that AB1404 be enforced. In other words, reporting of "aggregated farm gate deliveries" has not been a significant issue and no one has stated that simply reporting water use pursuant to 531.10 would result in more efficient use of water. Therefore, it is only the requirement to adopt a pricing structure based in part on quantity delivered that is necessitating the need and "renewed interest" in measurement at the farm gate level.

#### Volumetric Pricing

*.... Adopt a pricing structure for water customers based at least in part on quantity delivered.*

The legislation does not require that water agencies report to DWR how they will comply with this pricing requirement, other than to state that pricing should be a component of the Water Conservation Plan.

As stated above, for agencies charging volumetrically, the amount measured will have a direct effect on the amount charged to the grower. However, the legislation allows for water agencies to have a pricing structure that is based in part on quantity delivered; therefore, it is likely and should be expected that some agencies may not charge strictly or entirely on a volumetric basis.

For example, an agency may charge 75% of its costs using a fixed land assessment, with the 25% balance of the costs being charged volumetrically. Agencies may prefer this revenue method as reducing applied water doesn't reduce costs and having a "base revenue or assessment" would ensure collection of annual revenue to cover costs. Under this pricing scenario, the accuracy of measurement becomes even less critical as only a portion of the total water supply is measured volumetrically.

Hopefully, the above information and examples provide some context as to the need to identify how measurement information may be used; why a high level of measurement accuracy may not be warranted; why including basin efficiency in the discussion is relevant; and why a pairing pricing with measurement is a necessary conversation.

Based on the above information, a course of action to move forward would be the following:

1. DWR should develop a Policy defining the purpose of measurement and pricing as it pertains to the legislation. If the purpose is conservation and water use efficiency, the Policy should clearly articulate how measurement and pricing will result in conservation and efficiency and, additionally, how quantifying levels of accuracy will meet that Policy directive.
2. Consistent with this new Policy, develop a range of performance based options that that allows for acceptable measurement practices, including measurement at the turnout or measurement at the lateral. Also, another option would be to include a specific measurement exemption to CVP contractors complying with USBR Conservation Plans.
3. Consistent with this new Policy, implement a phased approach to comply with the measurement requirement. Water agencies do not have enough time during the maintenance season to install measurement devices in a single year or the finances to do so by July 2012. Further, it is also unlikely that manufacturers will have the devices available in a single year to supply all the water agencies in the state who would be installing new devices.
4. Consistent with this new Policy, discuss pricing and basin efficiencies in concert with measurement and how all these activities will jointly meet DWR's policy.
5. DWR, in consultation with water agencies, develop a pilot project that will demonstrate that measurement, pricing, and basin efficiencies will support DWR's Policy and be consistent with the legislation. This information could also be used in the reporting requirements back to the State Water Resources Control Board and the Legislature.

Our hope is that this effort is not regulatory in nature, but rather is a voluntary program that will meet the requirements of the legislation, provide data to DWR and others that is useful in statewide water use and planning, and ensure water supplies are being used as efficiently as possible from local, regional, and statewide perspectives.

Thank you for your consideration.



Thaddeus L. Bettner  
General Manager

April 11, 2012

Fethi Benjema  
Department of Water Resources  
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Sacramento, CA 95814  
Jemaa@water.ca.gov

**SUBJECT: March 26 - Notice of Modifications to the Text of Proposed Agricultural Water Measurement Regulation**

Dear Fethi:

Below are our comments in response to the March 26<sup>th</sup> "Notice of Modifications to the Text of the Proposed Agricultural Water Measurement Regulation."

**The Department Failed to Establish Sufficient Necessity in the Initial Statement of Reasons**

As stated in our March 14 letter, we continue to be very concerned that the Department has not adequately responded to the Office of Administrative Law (OAL) February 8, 2012 decision, which states the following in comment section (C):

“The Initial Statement of Reasons provided with this regulatory action is inadequate. For the most part, it describes "what" the regulations do, not "why" they are needed. The Initial Statement of Reasons fails to provide the public with the rationale for the determinations by the Department as to why the specific regulatory changes are needed to carry out the purpose for which they are proposed. This vital information should have been made available to the public during the rulemaking process so that the public is informed of the basis of the proposed action and can comment knowledgeably during the public comment period.”

The Department of Water Resources' March 26<sup>th</sup> "Supplement to the Initial Statement of Reasons" again fails to address OAL's decision. We have attempted to resolve this very issue of "why" the regulation is needed and how the regulation answers the "why" question. Clearly, this matter has not been resolved and we believe OAL will again make the same findings and disapprove the regulation.

Following that outcome, we are willing to meet with the Department to construct a regulation that will be based on the objectives and goals of the legislation.

**The Regulation Lacks Sufficient Necessity to Justify Numeric Accuracy Standards**

Additionally, we continue to reiterate the concerns we raised in our March 14, 2012 letter (see attached) regarding the failure to establish sufficient necessity to justify the use of a numeric accuracy standard, or the specific levels of accuracy ( $\pm 5\%$ ,  $\pm 10\%$  or  $\pm 12\%$ ) within the regulation.

Water Code Section 10608.48(b) requires agricultural water suppliers to “Measure the volume of water delivered to customers with sufficient accuracy” to submit an annual report to the Department that summarizes aggregated farm gate delivery data and “adopt a pricing structure for water customers based at least in part on quantity delivered.” The Department has not established why this language necessitates or justifies the levels of accuracy established by the regulation. For the purpose of adopting a pricing structure, why wouldn’t sufficient accuracy be determined by the local water supplier, who would need to justify the accuracy to the water users it serves? If the water users are comfortable with an accuracy level of  $\pm 15\%$  for the purpose of developing a pricing structure, why would it be necessary for the Department to establish a more narrow accuracy standard?

### **Clarity Standard**

We appreciate the effort the Department has made to clarify Sec. 597.3(b)(1)(B) regarding the requirements for turnout level measurement. The proposed amendment to strike “or devices” helps to clear up what requirement regulated entities will be expected to meet. Certainly, this change is consistent the legislation requiring “sufficient accuracy” for reporting aggregated turnout water deliveries and for local agencies to implement volumetric pricing. Absent this change, the regulation would have essentially required “absolute accuracy,” which would be inconsistent with the legislation.

Thank you for considering our comments. Please call Todd Manley at (916) 442-8333 if you have any questions.

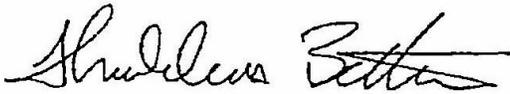
Sincerely,



Todd Manley  
Northern California Water Association



Tim O'Halloran  
Yolo County Flood Control &  
Water Conservation District



Thad Bettner  
Glenn-Colusa Irrigation District



Lewis Bair  
Reclamation District 108



Ted Trimble  
Western Canal Water District

March 14, 2012

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Jemaa@water.ca.gov

**SUBJECT: Response to Notice of Modifications to the Text of Proposed Agricultural Water Measurement Regulation**

Dear Mr. Benjema,

As you know, we have actively participated throughout the process of developing the agricultural water measurement regulation mandated by SB X7 7 and have attempted to be proactive and supportive of the Department of Water Resources' (Department) efforts. The February 8, 2012 decision by the Office of Administrative Law (OAL) raised concerns similar to those we have raised in the past. The Department's response to OAL's comments does nothing to change the regulation from being a very expensive and essentially non-implementable program that does not address the requirements established by the legislation. Our comments are summarized below.

**The Department Failed to Establish Sufficient Necessity in the Initial Statement of Reasons**

In comment section (C) of OAL's decision, it stated the following:

“The Initial Statement of Reasons provided with this regulatory action is inadequate. For the most part, it describes "what" the regulations do, not "why" they are needed. The Initial Statement of Reasons fails to provide the public with the rationale for the determinations by the Department as to why the specific regulatory changes are needed to carry out the purpose for which they are proposed. This vital information should have been made available to the public during the rulemaking process so that the public is informed of the basis of the proposed action and can comment knowledgeably during the public comment period.”

In the attached December 13, 2010 letter from Glenn-Colusa Irrigation District (GCID) to the Department, it asked the same questions of why or what are the purposes of the regulation. At the close of the letter, five actions were offered that the Department should pursue; none of which have been considered. In fact the first action from the December 13 letter, stated below, asks the “why” question. This appears to be consistent with the concern raised by OAL.

“DWR should develop a Policy defining the purpose of measurement and pricing as it pertains to the legislation. If the purpose is conservation and water use efficiency, the Policy should clearly articulate how measurement and pricing will result in conservation and efficiency, and additionally, how quantifying levels of accuracy will meet that Policy directive.”

Unfortunately, DWR’s response to the OAL decision does not resolve the necessity issue as required by OAL as cited on page 7 of the decision:

“It is statutorily mandated that the Department articulate its reasons for adopting the specific regulatory provisions for each section so that the public has an opportunity to comment on the process and the reasoning of the Department. The Department will need to introduce a statement of reasons into the rulemaking file that resolves the necessity issues by making the document available during a 15-day notice of availability pursuant to Government Code section 11347.1.”

Following the Department’s resolution of the issues contained in the OAL decision, we firmly believe the regulation will likely require some further revisions, and perhaps relaxation of the requirements since they appear overly burdensome, expensive and inconsistent. Finally, we believe the regulation will require an additional public comment period.

### **Clarity Standard Related to “Cost-Effectiveness”**

In comment section (A) on page 3 of OAL’s decision, it stated the Department was inconsistent in describing the applicability of cost-effectiveness of water measurement. The Department has stated the legislation was silent on cost-effectiveness; therefore; staff determined cost of measurement was not relevant and could not be included in this regulation. In other words because the legislation was silent there was not an allowance for consideration.

However, it is interesting that the Department has exercised complete freedom and liberty to take two words from the legislation, “sufficient accuracy,” to create a 10 page regulation. Certainly, the Department can make a decision to include cost effectiveness as a factor of what “sufficient accuracy” really means. If the legislation stated “absolute accuracy”, or “without error” then perhaps cost would have no meaning and agencies would be required to spend whatever is necessary to measure a turnout. However, the legislation says accuracy must be "sufficient," (i.e. enough, adequate, acceptable, agreeable, satisfactory) such that water agencies can report a single aggregated volume from all turnouts on a form (which the Department has stated it will not use). To state that the cost of measurement should be unlimited in order to write a single value on a report that the Department will not use is an abuse of agency funds, and would be an abuse of State funds if this were implemented by agencies smaller than 25,000 acres for which the State would need to provide grant funding to implement.

Additionally, implementation of this regulation will require that agencies expend hundreds of millions of dollars, for which the agencies will need to increase water rates or assessments from their constituents. As the Department understands and OAL should realize, water agencies cannot increase these rates unless the increase is consistent with Proposition 218 and approved by voters. If cost-effectiveness is not included in this regulation and measurement is too expensive, voters will not approve increased rates to comply with this regulation.

To not address the Proposition 218 issue and/or placing an agency attempting to comply in direct conflict with constituents and voters is not consistent with decision making and flexibility the Department has as it relates to interpreting the legislature's "sufficient accuracy" or "range of options" allowance.

In addition, the Department's attempt to address the concerns raised by OAL regarding Sec. 597.3(b)(1)(B), which OAL was able to describe by underlining two phrases, has ballooned into 15 separate changes to this section. The numerous changes and additions of text have done nothing to clarify the regulation and have increased the level of confusion for the parties responsible for implementation.

Given the significance of the issues raised in this letter and by OAL, an appropriate and legal resolution must be made to ensure the useful implementation of an agricultural water measurement program.

Please contact Todd Manley, Northern California Water Association at 916-442-8333 if you have questions regarding these comments.

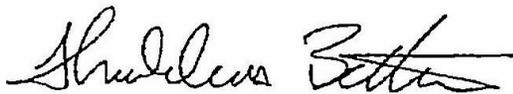
Sincerely,



Todd Manley  
Northern California Water Association



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Yolo County Flood Control &  
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