

Kern River Watershed Coalition Authority

*A joint powers authority to serve as coordinator and coalition group under the Irrigated Lands Regulatory Program
in the Kern River watershed portion of Kern and Tulare Counties
12109 Highway 166, Bakersfield, CA 93313-9630*

August 10, 2012

VIA EMAIL TO:
dsholes@waterboards.ca.gov

Karl Longley, Chair
Jon Costantino, Vice Chair
Katherine Hart, Board Member
Sandra Meraz, Board Member
Jennifer Moffitt, Board Member
Carmen Ramirez, Board Member
Robert Schneider, Board Member
Pamela Creedon, Executive Officer
Clay Rodgers, Assistant Executive Officer
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

**Re: Comments of Kern River Watershed Coalition Authority re Interested
Party review of draft Waste Discharge Requirements General Order for
Members of a Third Party Group within the Tulare Lake Basin (July 2012)**

Dear Board Chair, Vice Chair, Members, Ms. Creedon and Mr. Rodgers:

Introduction/Summary

As you may be aware, the Kern River Watershed Coalition Authority (Authority) is a joint power authority, a public agency, composed of most of the agricultural water districts within that portion of Kern County that would be subject to the above referenced draft order, including portions of southern Tulare County within multi county districts. It administers the existing surface water program under the Coalition Group Conditional Waiver for the Kern River Sub-watershed ("Kern") of the Southern San Joaquin Valley Water Quality Coalition ("SSJ Coalition"), of which we are a part. The Kern area includes the watershed areas of the Kern River, Poso Creek, Rag Gulch and White River. We incorporate by reference the comments submitted by the SSJ Coalition, dated August 10, 2012, and supplement them as follows, as it relates to the Kern area.

Our fundamental disagreement with the proposed General Order is its broad application to all groundwater in Kern—in concept we have no problem with the current surface water program and remain committed to implement it. If the Kern area is subject to a General Order affecting groundwater, it should be tailored to our specific circumstances, as discussed below.

The Authority and its public agency water districts are concerned with water quality in our area. After all, it is our landowners and residents that drink the water and use it for beneficial uses outside of agricultural uses. Our member districts have for many decades been engaged in monitoring of groundwater levels and quality and have implemented some of the most state-of-the-art water management and water banking programs within the State. As the local officials charged with managing water resources in Kern, we are the best prepared to address water quality issues in our area and are doing so. We are concerned that the current staff proposal layers a significant monitoring and reporting obligation upon the landowner (which may be duplicative to monitoring activities already undertaken in Kern) and does little to address what we understand to be the primary focus of the order, preservation of groundwater quality.

Although not clearly stated, the proposed General Order appears to include an assumed presumption that anyone who irrigates discharges "waste" and pollutes our groundwater basin. For the reasons noted below, we do not believe that this apparent assumption can be substantiated by the facts in Kern. As will be described further below, there is no evidence that normal farming practices in Kern, as they exist now, are unreasonably affecting groundwater quality and causing nitrate levels to materially increase. The proposed new massive regulatory program will by the staff's own admission cost tens of millions of dollars per year to Kern area growers and in our judgment lead to minimal if any beneficial impact insofar as improving groundwater quality in our area.

Additionally, we note this **proposed General Order appears to be a "rush to regulate"**—aside from the upcoming August 21st workshop (which we appreciate being scheduled) the Board and its staff have done little to reach out, engage with and educate the agricultural community as to the need for, purposes or contents of the proposed order, and most farmers are unaware of this proposal. Normally, to solve a problem, the first step is to educate others affected as to its existence, extent and gravity. This would usually be followed by a request for input and suggestions from those affected as to how to solve the problem. Voluntary attempts to solve the problem would then be encouraged. If these voluntary approaches do not work, then it would be time to ask for or propose regulation. The Regional Board has followed none of these preliminary steps, it has simply proposed regulation with insufficient time for input and suggestions from the affected community. In fact, the only interaction with the agricultural community in the Kern area to date has been initiated by us.

Background

There are approximately 1,040,000 irrigated acres in the Kern sub-watershed area, of which approximately 303,000 acres are enrolled in the present surface water program under the Conditional Waiver. The limited area under the present surface water program is because there are very few streams and creeks in our area. The present surface water program is successfully being implemented. We have actionable "exceedances" only in one area and for that area a Management Plan has been prepared and submitted to the Regional Board.

The Kern area is distinguishable from other areas in the Central Valley Region and is designated by the Department of Water Resources as the Kern-Sub Basin, a separate and distinct hydrologic unit of the Tulare Lake Basin. The following is preliminary information and findings and will be further substantiated through evidence presented during the public review period for this

proposed General Order, if it is to proceed as the staff has indicated. In particular, we point out the following:

1. The average depth to groundwater in the Kern area is 238 feet (calculated as of 2010). This average depth does not take into account the Westside area at all, generally located uphill of the California Aqueduct, for which informed sources assumed there is no or little usable groundwater¹ which the Regional Board staff insists would be subject to this proposed Order. Any groundwater in these areas, all of which is highly saline, is much deeper. Our average depth to groundwater (excluding the Westside) compares as follows to other areas:

Region	Average Depth to Groundwater
East S. J.	83 feet
Kaweah Sub-Basin	101 feet
Kern	238 feet
Kings Sub-Basin	92 feet
Tulare Lake Sub-Basin	89 feet
Tule Sub-Basin	163 feet

With increasing depth to groundwater, the likelihood that all of the constituents in any applied water will reach groundwater decreases. The thicker vadose zone provides greater opportunities for ion exchanges and changes to any chemically unstable constituents such as nitrate.

2. Irrigation practices in the Kern area are some of the most advanced in the State. As a result of increasing water costs and to improve efficiency and production, many growers have switched away from traditional flood and furrow irrigation years ago and now utilize some form of low application sprinklers (mostly micro spray) or drip technology. It is reported that Kern area on-farm irrigation efficiency is 95%². Accordingly, with water being applied through more efficient irrigation practices employed in our area, there is less likelihood of any “wastes” moving down to groundwater.
3. Information from experts in Kern, including Farm Advisors, Farm Managers, Certified Crop Advisors and growers themselves, indicate that nitrogen fertilizers are not being applied in excessive amounts. It is a known fact that California growers today are much more agronomically educated and economically knowledgeable than their predecessors. The majority of people involved with production agriculture, and nitrogen fertilization in

¹ Wood P.R. and G.H. Davis 1959 Ground-Water Conditions in the Avenal-McKittrick Area, Kings and Kern Counties, California, Geological Survey Water-Supply Paper 1457. Washington, D.C. Department of the Interior and U.S. Bureau of Reclamation.

² Sanden, Blake. 2008. How Good is Water Use Efficiency in California Agriculture? Bakersfield, CA.: University of California Cooperative Extension Kern County. Available at: http://cekern.ucdavis.edu/Irrigation_Management/How_Good_is_Water_Use_Efficiency_in_California_Agriculture/. Accessed August 7, 2012.

particular, are familiar with the Law of Diminishing Returns. In fact, crop fertilization is often used to illustrate this concept, which is used in many other disciplines.

In 2011, the total acreage in Kern County composed of fruit and nut tree crops was 385,319 acres. Bearing almond acreage was 151,765 acres, or a significant 39.4% of the total fruit and nut tree crop acreage. Almonds are the most researched California tree crop for obvious reasons. The Almond Board of California³ (ABC) has provided growers with an immense amount of information regarding almond nutrition. Consequently, it can be reasonably concluded that most of this acreage must be under careful nutrient management translating to careful nutrient management of a high percentage of permanent Kern County cropland.

4. We have some of the most advanced and clearly the largest water banking projects in the world in Kern. (Attached is a map showing the location and general characteristics of each.) Some of these projects are “partnerships” with urban agencies throughout the State. Most of the projects involve pumping stored groundwater back to the California Aqueduct for “return” and use, either in Kern or other areas of the State. All such water returned to the California Aqueduct is already subject to water quality guidelines, as specified by the Department of Water Resources. The fundamental purpose of these banks would be threatened by the intrusion of poor quality groundwater. This clearly creates motivation within Kern to protect our groundwater quality.
5. There are a few areas (approximately 4% of Kern area water systems serving about 0.2% of the overall population) on the valley floor, where communities have drinking water systems which have delivered water that exceeded the nitrate MCL since 2005. In conjunction with EPA’s Safe Drinking Water Search (SDWIS) database and the California Department of Public Health, we have compiled the attached table summarizing water systems within the Kern area with reported nitrate MCL exceedances in the last 8 years, along with resolution of each, if known. In several instances, these issues have already been addressed or can be addressed by hooking up to existing public water supplies. Fortunately in Kern, most of our population is in larger metropolitan areas or towns where there has been adequate funding to address water quality issues, although the record will show most of the problems are for constituents other than nitrates. We are prepared to assist with resolution of any remaining issues. “Bottom line”, this multi-million dollar per year regulatory program will do very little if anything to provide safe drinking water to our residents!
6. In major areas where drinking water sources have in the past had higher nitrate levels exceeding the MCL, it is evident that much of that “pollution” came from sources other than agriculture. The most significant area of nitrates in drinking water is the Rosedale area, generally west of the City of Bakersfield, which for the most part is in an unincorporated non-sewered area, with residents relying on septic systems.

³ Almond Board of California. 2010 and 2011. Almond Sustainability Modules. Modesto, Cal.: Almond Board of California. Available at: <http://www.almondboard.com/Growers/Sustainability/SustainabilityModules/Pages/Default.aspx>. Accessed 07 August 2012.

7. Essentially the entire Kern sub-coalition is “covered” with organized water and similar districts and agencies (see attached map), those being the members of the Authority. All of these agencies manage groundwater as part of their responsibilities, to the extent that they have usable supplies. Many of them have long adopted AB 3030 or SB 1938 groundwater management plans, that include groundwater quality monitoring components.

These are just a few facts distinguishing the Kern area from others. Further information will be developed. Of course, we welcome an opportunity to meet with the Board and/or staff to engage in an exchange of information and discuss these issues further.

We also note, although not unique necessarily to our area, to the extent the Regional Board and staff may place any reliance on the report entitled “Addressing Nitrate in California’s Drinking Water” (Harter and Lund, January, 2012), many of the assumptions and calculations in that report are clearly in error. Please refer to our letter of May 23, 2012, to the State Board providing our preliminary review, a copy of which is attached.

The Regional Board's Jurisdiction

To be clear, there is no question the Regional Board has jurisdiction to prevent pollution of groundwater—and we want the Regional Board to exercise its jurisdiction to protect groundwater where appropriate for the benefit of our landowners and residents, and to protect our unique water banking assets.

However, as you know, the Regional Board’s jurisdiction is not unlimited. Among other things Water Code section 13263, under which this proposed General Order would be advanced, provides in part “The requirements shall implement any relevant water quality control plans that have been adopted, and shall take into consideration . . .the provisions of Section 13241.” Water Code Section 13241 in turn provides in pertinent part that water quality control plans are to “ensure the reasonable protection of beneficial uses. . .however, it is recognized that it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses.” Similarly, Water Code section 13050(l) defines “pollution”, which is what the Regional Board is to prevent, in part as the “alteration of quality of waters of the state by waste to a degree which unreasonably affects . . .waters for beneficial uses.”⁴

That is, the Board’s authority to adopt a general order pursuant to section 13263 is subject to providing “reasonable protection” of beneficial uses of groundwater and it does not have the authority to adopt regulations that do not reasonably protect groundwater from some “waste”. Based on the facts as we know them to be in our area, we do not believe anyone can credibly assert that the proposed General Order meets this standard, at least as it applies to the Kern area.

⁴ In Finding 23 of the proposed General Order, Water Code Section 13267 is cited as a source of authority for the proposed order. Assuming that Section is a valid basis for the proposed order, along the same lines of the cited authorities above requiring “reasonableness,” it is noted that Section 132367(b)(1) (which is quoted in Finding 22) provides in part “The burden, including costs of these reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.”

Furthermore, if there were some modest benefits to implementing the proposed General Order, in light of the staff's estimated cost to implement this program of approximately \$120 per acre per year, or approximately \$125,000,000 per year for our area, how could this program satisfy any cost-benefit analysis? And even if the staff's estimate is excessive, in light of the fact Kern growers have already significantly implemented efficient farming and irrigation practices, let's say it is only 10% of the estimate, is approximately \$12,500,000 per year justified? **In light of this extreme cost , and lack of any clearly defined benefits to be obtained through the proposed General Order (at least as applied to Kern), how can it be said that the proposal meets the legal standard of a "reasonable" regulation of water quality?**

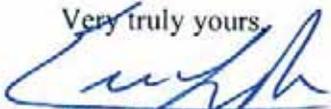
Conclusion

For reasons noted above, we do not believe the Regional Board has jurisdiction to impose the proposed General Order upon the Kern area as it relates to groundwater and/or that the proposed General Order would constitute an unlawful overly burdensome and unreasonable regulation. If, however, the Regional Board provides for a General Order applicable to the Kern area, we encourage that it develop a new approach.

To that end, if the Regional Board continues to assert that a General Order must be in place for the Kern area we respectfully request that (i) the Kern area be as a separate coalition area, (ii) a proposed order be drafted to be reflective of local conditions and institutions and be efficient, cost effective and practical, (iii) a proposed order should include flexibility to incorporate the latest available science and data, both existing or available later, and (iv) that additional time be allowed for your staff to work with us to develop such an order and allow for adequate public review. We stand ready to work with you and your staff to implement such an approach.

Thank you for consideration of our views.

Very truly yours,



Eric Averett, Chairman

cc: Senator Michael Rubio
Senator Jean Fuller
Assemblywoman Shannon Grove
Kern County Board of Supervisors

Attachments: Water banking projects in Kern Sub-watershed;
Drinking water systems exceeding the nitrate MCL since 2005;
Kern Sub-coalition water district agency and map;
May 23, 2012 letter to SWRCB regarding UC Davis Report



WATER & WASTEWATER
MUNICIPAL INFRASTRUCTURE
LAND DEVELOPMENT
AGRICULTURE SERVICES
DAIRY SERVICES
LAND SURVEYING & GIS
PLANNING & ENVIRONMENTAL
DISTRICT MANAGEMENT

Job No. 3484-12V1-ADV
FRESNO • CLOVIS • VISALIA • BAKERSFIELD • OAKDALE

130 N. Garden St.
Visalia, CA 93291
(559) 636-1166 • FAX (559) 636-1177
www.ppeng.com

May 22, 2012

Charles R. Hoppin, Chairman and Members
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Re: Comments on UC Davis Report On Nitrate In Groundwater

Dear Chair Hoppin and Members of the Board :

I am a registered agricultural and civil engineer with extensive experience with water quality issues, including assisting numerous dairymen with the Dairy General Order. I represent the Kern River Watershed Coalition Authority that currently administers the surface water program in Kern County.

As we consider promising options to deal with nitrate issues, I urge you to keep in mind that agriculture is an important industry and has a part in this issue. While water quality is very important, we need to maintain competitiveness and the viability of agriculture in the state. The potential options being considered portend radically higher operating costs. If the rationale for action is in this UC Davis report, we need to look at the report very carefully. Wise decisions must be made based on sound data to ensure good results, finding the optimal and reasonable path forward. The UC Davis report was a monumental effort and it has been a big undertaking just to review it. We have only begun to review the report. The following are some preliminary comments and observations of fundamental shortcomings and incorrect assumptions on which the report relies—based on additional review we will undoubtedly have further comments.

We are concerned about the design of the study: leaching to groundwater is deduced by subtracting estimates of other outputs from estimated inputs, with attendant errors. We fear that errors can be magnified in this way. Direct empirical analysis regarding leaching is lacking. The report suggests that approximately \$200 million per year is wasted over 3.12 million acres. It is difficult to believe that farmers could waste an average of \$64/ac. This averages out to 137 lb/ac/yr N going to groundwater, a very large number compared to typical nitrogen fertilizer recommendations. See attachment A. The report notes that there is significant uncertainty (+/- 30%) in the 195 Gg N/yr leaching estimate to groundwater. Based on my review of the assumptions below, I submit that this must be much lower.

The report lacks measurements and makes many significant assumptions. One of these assumptions was that the growth of the dairy industry created an excess pool of nitrogen that is unabsorbed by crops. The report fails to take into account that dairies are under a General Order of Waste Discharge Requirements which includes mandatory nutrient management plans (NMPs). The report acknowledged that little is known about the amount of synthetic fertilizer applied on fields receiving manure, but assumed that much of the manure applied on and off dairies was not used beneficially. Largely, it was assumed that crop needs were met by synthetic fertilizer and much of the manure was applied as surplus.

Figure ES-2 in the UC Davis report suggests that nitrogen from land-applied dairy manure is nearly enough to meet the harvest uptake of 3.12 million acres of crops. Assuming an uptake of 425 lb N/ac for double cropped wheat and corn (attachment A) and 10% atmospheric losses, the 127 Gg N/yr of land-applied dairy manure can be utilized on approximately 423,000 acres. This is 32% more than the 320,000 acres that is estimated to be under dairy management. See equation 1.

$$127 \text{ Gg N} * 90\% * \frac{\text{lb}}{453.6 \text{ g}} * \frac{\text{ac}}{425 \text{ lb}} * \frac{1}{1.4} = 423,000 \text{ ac}$$

Equation 1

The 320,000 acres of dairy land that is available can harvest 62 Gg N/yr. See equation 2.

$$320,000 \text{ ac} * \frac{425 \text{ lb N}}{\text{ac}} * \frac{453.6 \text{ g}}{\text{lb}} = 62 \text{ Gg N}$$

Equation 2

The 381 Gg N/yr applied over 3.12 million acres averages out to 242 lb N/ac/yr. This seems in the acceptable range given the table of nitrogen uptake values in attachment A. The simple average of all crop uptakes in this table is 200 lb/ac. However, looking at the average harvest uptake over the study area raises some doubt. 130 Gg N/yr averaged over 3.12 million acres yields 92 lb N/ac/yr. See equation 3. This is very low, perhaps 1/2 to 1/3 of what it should be, judging by the nitrogen uptake values in attachment A.

$$\frac{130 \text{ Gg N}}{\text{yr}} * \frac{1}{3,120,000 \text{ ac}} * \frac{\text{lb}}{453.6 \text{ g}} = \frac{92 \text{ lb}}{\text{ac} * \text{yr}}$$

Equation 3

If dairy land and the associated harvest uptake (calculated in equation 2) is taken out and averaged over the remaining acres, it further supports that the harvest value is significantly underestimated. See equation 4. This is much less than the lowest values on the table in attachment A.

$$\frac{(130 - 62) \text{ Gg N}}{\text{yr}} * \frac{1}{2,800,000 \text{ ac}} * \frac{\text{lb}}{453.6 \text{ g}} = \frac{54 \text{ lb}}{\text{ac} * \text{yr}}$$

Equation 4

The data that this report is based on is five years old. Several notable changes have occurred in this time, and would likely affect the data. The Dairy General Order has been implemented and data is being collected that could potentially address some of the assumptions that were made. There has been increased adoption of subsurface drip irrigation (SSDI) and other low volume irrigation methods with higher irrigation efficiencies and precision water and nutrient application. Higher irrigation efficiencies result in less deep percolation and less opportunity for nutrients to leave the root zone.

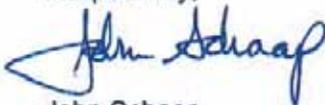
It is important to note that the whole study area is not homogeneous. The Kern sub-watershed is different in several ways. The study assumed a typical groundwater recharge rate of 1 ac*ft/ac/yr. I submit that the average in Kern is significantly less than that, due to good irrigation

efficiency and even regulated deficit irrigation. Due to reductions in available water supplies, Kern is chronically water-short. Water is rationed and valuable, and the same is true for nitrogen fertilizers. I believe that the state of nutrient management in the Kern sub-watershed is good, as farmers already have a profit motivation to be good stewards. There are other unique issues in Kern such as moisture deficient soils, aquitards, and naturally occurring brackish waters that all indicate a low threat to groundwater quality, even if deep percolation existed.

Altogether, this report raises questions regarding conclusions that can be made about current impacts. What we are seeing in groundwater now are legacy issues. In light of the questions that we have and the importance of the subject, we would like to have more outreach sessions regarding assumptions that were made and how the conclusions may be different with different assumptions. We'd like an opportunity to help with better assumptions. One of the biggest assumptions that we've questioned above has been regarding manure applications. We submit that synthetic applications likely went down as manure became available. We are concerned whether similar assumptions were applied to sludge applications as well. We do not agree with assumptions that manure or other resources are not being used beneficially by farmers, especially in light of the Dairy General Order. With indicated harvest uptake numbers likely underestimated, leaching has to be much lower than 138 lb/ac/yr. Agriculture can't be wasting an average of \$64/ac/yr.

Please continue to strive for a true assessment of legacy vs. current issues and use good data and conclusions to make wise, optimal, and reasonable decisions.

Respectfully,



John Schaap
RAE 563, RCE 61754

Attachment A. Table of nitrogen uptake for various crops.

Attachment A

Plant Food Utilization by Various Crops
Western Fertilizer Handbook, 8th edition

Crop	N, lb/ac
Field crops	
Barley	160
Canola (whole plant)	240
Corn (grain)	240
Corn (silage)	250
Cotton (lint)	180
Grain sorghum	250
Oats	115
Rice	110
Safflower	200
Sugar Beets	255
Wheat	175

198 average

Vegetable crops	
Asparagus	95
Beans (snap)	175
Broccoli	80
Cabbage	270
Celery	280
Lettuce	95
Potatoes (Irish)	270
Squash	85
Sweet potatoes	155
Tomatoes	180

169 average

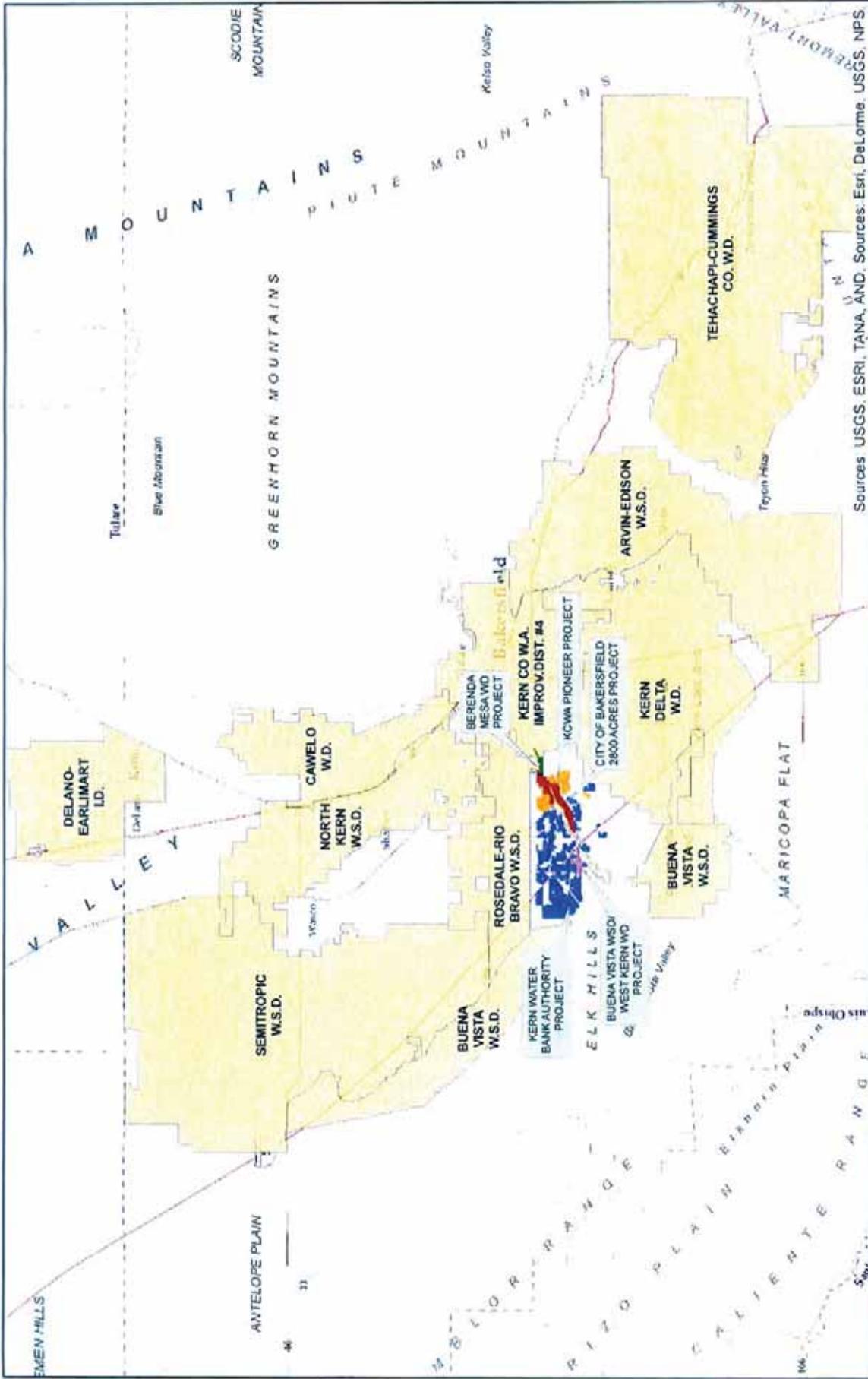
Fruit and nut crops	
Almonds (in shell)	200
Apples	120
Cantaloupes	220
Grapes	125
Oranges	265
Peaches	95
Pears	85
Prunes	90

150 average

Forage crops	
Alfalfa	480
Bromegrass	220
Clover-grass	300
Orchardgrass	300
Sorghum-sudan	325
Timothy	150
Vetch	390

309 average

Average 201



Sources: USGS, ESRI, TANA, AND, Sources: Esri, DeLoime, USGS, NPS



0 5 10 15 Miles

PROVOST & PRITCHARD
 CONSULTANTS
 130 N. Garden Street
 Visalia, CA 93291
 (559) 836-1186

Document Path: V:\Clients\Kern River Watershed Coalition\3484\348412V1-LRP 2012\GIS\Map\WaterBanking\Location.mxd

Legend

Districts With Groundwater Banking Programs

Kern River Watershed Coalition Authority

Districts with Groundwater Banking Facilities and Other Regional Banking Facilities

Water System Name	Population Served ¹	No. of Connections ²	Number of Exceedances				Most recent NO ₃ conc. ³ , ppm NO ₃	Compliance Period ¹	Solutions Identified ³
			2005-2007	2008-2010	2011	2012			
Arvin Community Services District	14,713	3,536	2	2				Issue resolved, as affected well is offline. Replacing when funds are available.	
Brock Mutual WC ¹	500	155		2				Consolidate w Vaughn Water Co. Well on to be put on standby or abandoned.	
East Wilson Road Water Company	35				4	1	1st Qtr 2012	Connection to East Niles CSD. They got a planning grant and are extending a pipeline and will abandon affected wells.	
Eros Lane Public Utility District	270	82	1			54	2nd Qtr 2007	Options: Nitrate blending treatment OR consolidate w Vaughn Water Co.	
Gooselake Water Company	80	32		1		48.3	4th Qtr 2008	Options: Drill 2nd well OR consolidate w nearby water system.	
J & I Farms Inc.	50		1		3	74	1st Qtr 2012	RO treatment (assumed)	
Murray Family Farms Fruit Stand	50			1		50	1st Qtr 2012	RO treatment (assumed)	
Orange Grove RV Park ¹	200	180	2					Considering connection to East Niles CSD.	
San Joaquin Estates Mutual Water Co	165				2	57	1st Qtr 2012	Options: Consolidate w East Niles, drill new well, OR treat water	
Seventh Standard Mutual	66	22	2	2	1	46	1st Qtr 2012	Install water delivery pipeline & new lines & meters to residents. Consolidating with Oldale Mutual.	
Son Shine Properties	500	106		2	1	49	4th Qtr 2011	Consolidation with Arvin CSD pending.	
Sun Pacific Shippers - Maricopa Water Sys	350				2	48	1st Qtr 2012	RO treatment (assumed)	
Wheeler Farms Headquarters	25	13			4	140	1st Qtr 2012	RO treatment (assumed)	
Wilson Road Water Community	72			3	4	76	1st Qtr 2012	Options: water treatment or intertie with East Niles CSD	
Total Exceedance by Year			8	13	21	8			

¹ Information from database search on EPA's SDWIS website (http://loasub.epa.gov/erwin/5dw_term_v2.create_page?state_abbr=CA)

² Information from database search from CA Dept. of Public Health for unincorporated water systems

³ Water system added from database search from CA Dept. of Public Health for incorporated water areas