
Drilling Through the Drought: A Look At Well Drilling Activity In The Central Valley

In rural areas like California's Central Valley, private wells are a common source of household drinking water. The state of California estimates about two million people in the state rely on private well water or other unregulated underground water sources.

Well water is just as important to farmers who use it to irrigate crops, especially when surface water is not available. During the past three years of drought, faced with unprecedented surface water cut backs, the number of homeowners and farmers drilling for water has boomed.

The overdrafting of groundwater and the lack of statewide groundwater regulation in California have been widely reported. This summer, California lawmakers were busy re-writing rules that would amount to the first comprehensive state regulation of groundwater. The set of bills are now awaiting action by Governor Jerry Brown.

San Joaquin Valley Map

Click on each of the counties below to learn more about well drilling in that area.

After Capital Public Radio reported about [local tensions over groundwater access](#) this summer, we were curious who was drilling the most wells, and where. We requested well permit data from each of the eight San Joaquin Valley counties. While the data doesn't show how much water is being pumped, it does give a picture of where demand for water is high.

Local agencies make different choices about how they monitor groundwater use, and that was apparent in the variety of permit data presented to us. While most counties differentiate between wells used for domestic drinking water and ones used for crop irrigation, one county didn't start doing so until 2012. While one county issues permits specifically for dairy wells, others don't. One county freely gave us addresses of well owners, another county said that would infringe upon the well owner's privacy rights.

The data came in a variety of formats, categories and timeframes, so it is difficult to make comparisons. Some counties reported in fiscal years, others presented data in calendar years. The ending date of the well permit data set varies as well. One thing is clear; well drilling has increased in all regions over the past three years of drought, in some counties, quite considerably.

**Data from 2014 is not included in the charts, so prior years are not compared with this year's incomplete data.*

Fresno County

Fresno County has some of the highest drilling activity in the region, with a steady uptick in agricultural and private domestic wells drilled since 2011. Agricultural wells in 2014 have already surpassed the number drilled last year, and is more than three times the number drilled in 2011. The number of domestic wells drilled so far in 2014 is almost equal to the number for all of 2013.

Total wells in Fresno County

(Agriculture & Domestic): Data through Aug. 27, 2014

2013: 705 2014: 804

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Tulare County

Tulare County also has some of the highest drilling activity in the Central Valley. While most other counties have seen the number of new wells increase at most a few hundred from year to year, Tulare farmers and homeowners drilled 796 new wells in the first nine months of 2014. Two-thirds of the wells permitted this year have been granted to farmers for crop irrigation. But wells for both domestic and agricultural use have been on a steady uptick in Tulare County since 2011.

Total wells in Tulare County

(Agriculture, Domestic & Others): Data through Aug.1, 2014

2013: 486 2014: 796

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Merced County

Merced County has a high level of drilling activity compared to other counties in the Central Valley – with 562 new wells permitted in the 2013-2014 fiscal year. There has been a steady uptick over the past three drought years in both agricultural and domestic well drilling, with more than a five-fold increase in the number of irrigation wells.

Total wells in Merced County

(Agriculture & Domestic): Data through June 30, 2014

Fiscal Year 2013: 217 Fiscal Year 2014: 562

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Madera County

Madera County ended its fiscal year with a total of 371 new wells permitted. That's more than the total for the last year-and-a-half in San Joaquin County. The number of domestic wells in Madera dipped a bit in 2012-2013, but then doubled the next year. The number of new wells permitted for both domestic use and agricultural irrigation are more than double what they were four years ago. Agricultural well drilling has been steadily increasing over the past five years.

Total wells in Madera County

(Agriculture & Domestic): Data through July 2, 2014

Fiscal Year 2013: 170

Fiscal Year 2014: 371

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Stanislaus County

The total number of wells drilled since 2010 has been going up. The county did not start categorizing its wells until the end of 2012, so it's difficult to determine trends among farming and domestic wells. But the preliminary 2014 numbers show that agricultural well drilling is already higher than in 2013.

Total wells in Stanislaus County

(Agriculture, Domestic and Others): Data through July 23, 2014

Year 2013: 283

Year 2014: 341

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Kings County

Well drilling has been fluctuating among farmers and residences in this small county in the Southern San Joaquin Valley. The number of agricultural well permits has increased over the last two years, while permits for domestic use have remained relatively static.

Total wells in Kings County

(Agriculture, Domestic and Others): Data through July 1, 2014

Fiscal Year 2013: 207

Fiscal Year 2014: 149

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San Joaquin County

San Joaquin County has not seen high well drilling activity compared to other counties in the past couple of years. Overall there has been a dramatic *decrease* in the number of domestic wells drilled since 2005, with a slight uptick since 2010. Well permits to farmers have been trending upwards since 2005. The number of agricultural wells for the first half of 2014 exceeds the number for any year since 1993.

Total wells in San Joaquin County

(Agriculture & Domestic): Data through July 8, 2014

Year 2013: 138

Year 2014: 123

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Kern County

Kern County is home to the City of Bakersfield, a desert region, and state parks. Overall, the rate of well drilling in the county is not as high as it is in neighboring regions. Domestic well drilling has generally been declining over the past eight years, while irrigation drilling has fluctuated. Agricultural well drill is on the uptick now. There have already been more applications for irrigation well permits this year than all of last year.

Total wells in Kern County

(Agriculture & Domestic): Data through July 21, 2014

2013: 242 2014: 212

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