

# With New Drilling Rules Coming, State Regulators Struggle With Enforcement

Scott Detrow, KQED (San Francisco television), 10-10-14

Next year, California will implement a wide range of new regulations aimed at providing a lot more public disclosure about the hydraulic fracturing process. The new rules, set into motion by 2013's Senate Bill 4, will put California on par with other top drilling states when it comes to policing the fracking process.

But tough rules are only half of the equation — they don't matter if they aren't enforced. And the struggles state regulators have had keeping tabs on another part of the drilling process raise a lot of questions about whether California has the resources and the tools to handle a fracking boom.

## Garbage Cans For Drilling Operations

The method in question: deep injection wells. Drilling for oil and gas creates a lot of water waste. Fracking uses millions of gallons of salty, chemical-laced water. A lot of it comes back up with the oil and gas, and drillers have to do something with all that wastewater.

They usually take that stuff and bring it to an injection well, where they shoot the waste deep underground. Injection wells are basically garbage cans for drilling operations. The federal Environmental Protection Agency says these wells are the best way to dispose of drilling waste.

And while the fracking boom hasn't arrived in California yet, the state already hosts thousands of these wells. That's because the oil being drilled here is very watery.

"Ninety-five percent of what comes out of the ground in California from hydrocarbon zones is water," said Jason Marshall of the Department of Conservation's Division of Oil, Gas and Geothermal Resources — also known as DOGGR.

Columbia University seismologist Nicholas van der Elst said the fluid, when it gets deep underground, has likely been seeping into pre-existing fault lines, making it easier for them to shift.

"The better analogy would be that it creates a cushion of pressurized fluid," he said. "Kind of like a hovercraft or an air hockey table." Faults previously kept in place by pressure and friction were suddenly sliding.

So is this a problem in California? Marshall said the state's injection wells haven't been tied to quakes. One main reason, he said, is that the bulk of them are depositing wastewater in underground spaces that had already held oil and other liquids.

"That doesn't create the same dynamics we've seen in other parts of the nation," he said, "and as a result we haven't seen earthquakes in California from injection wells."

In fact, Marshall said, injection wells can actually stabilize the ground, since that space oil had filled before being pumped out could otherwise start to cave in.

## A Federal Audit's "Hard Findings"

But quakes or no quakes, when you're putting wastewater deep into the earth, there are a lot of things to regulate. And California hasn't always been doing the best job.

Three years ago, the federal government audited the state. The EPA report included a lot of criticism — notably the fact that the state Department of Conservation “lack[s] sufficient manpower and other resources to implement [oversight] at a satisfactory level, especially in the largest districts.” The audit also found some gaps in some state protection standards.

“There's some hard findings in there,” Marshall said.

But when the EPA followed up this summer and asked the state to provide an update on how it's addressed the issues, the department's response could be boiled down to: We're working on it.

“(DOGGR) has already started its ... evaluation,” the response said.

Why did it take three years to begin addressing the federal concerns? Marshall said DOGGR has been focusing on preparing for new types of drilling activity.

“Well, to be perfectly blunt, our attention has really been driven squarely onto hydraulic fracturing and well stimulation,” he said.

### **Water Contamination Near Injection Well Sites**

Still, the state's review already has some eye-opening findings. This summer, the state shut down about a dozen Kern County wells that may have been injecting waste into fresh water formations.

“We're still sorting out what happened with regard to those individual wells,” said Marshall. Like who gave approval — or whether approval was even given — to inject in those locations.

That lack of hard information worries environmental groups like Clean Water Action. Especially now that the State Water Board has located more than 100 water supply wells drilled within a mile of the injection sites that were shut down. And now tests show that a handful of those water wells may be contaminated.

“Nitrate, arsenic, and thallium exceeded the Maximum Contaminant Level (MCL) in four of the water supplies,” the State Water Board told the federal government in a letter last month. “TDS [total dissolved solids -- basically the level of saltiness] exceeded the secondary MCL (SMCL) in 3 samples collected, with maximum concentrations detected at 1,800 ppm.”

That technical statement means the water board found toxic substances in water supplies, a great concern Andrew Grinberg of Clean Water Action.

“The potential impact on real people is really the most interesting and compelling and concerning thing about the mismanagement of this program,” he said. “So when we see over 100 wells in direct proximity to places where disposal should not have been happening, that's the biggest cause for alarm.”

The state says it's not yet clear whether the contamination is tied to the injection wells, but it's continuing to investigate.

And Marshall said the department has also added more than 60 new positions so it can better regulate existing injection wells and the possible coming fracking boom. DOGGR is also beginning to reassess its injection well regulations, and may push for new standards later this year.

That move has Grinberg feeling a little better — but still frustrated.

“I don’t think we’d say it’s too little too late — it is too late,” he said. “However there’s still time to get it right. And going forward, making sure the improvements are there and happen is the most important thing.”

And on that last point, the state and its critics agree.