

## AB 982 (Williams) Hydraulic Fracturing Goundwater Monitoring

### Summary and Background:

AB 982 (Williams) requires companies that plan to conduct hydraulic fracturing operations (e.g. “fracking”) for oil and gas in California to monitor groundwater quality both before and after any hydraulic fracturing. The bill requires the appropriate Regional Water Quality Control Board to approve a monitoring plan specific to the location of the fracking operation. This bill will also require advance notice to the state describing the source and volume of water to be used in fracking operations.

California is the nation’s fourth largest oil producing state. Fracking is occurring in at least nine counties: Kern, Los Angeles, Orange, Monterey, Sacramento, Sutter, Colusa, Santa Barbara and Ventura, however, there are currently no regulations to ensure the safety of the practice and no required disclosure of where fracking occurs, what chemicals are injected, or any testing for contamination of air or water. The state has not tracked the source and quantity of water used for fracking, despite the intense scrutiny given to other water uses such as agriculture, environmental, and drinking water.



### The threat of groundwater contamination:

In 2008, Pro Publica reported that courts and state and local governments in Colorado, New Mexico, Alabama, Ohio, and Pennsylvania have documented more than 1,000 cases of water contamination near oil and gas drilling operations, many of them hydraulic fracturing sites.<sup>i</sup> In Dimock, PA, water samples contained dangerous quantities of methane gas, and dozens of other contaminants, including chemicals known to cause cancer and heavy metals.<sup>ii</sup> In Pavilion, WY, US EPA found pollutants such as benzene, naphthalene, phenols, and metals in samples from a monitoring well after fracking, rendering the town’s water undrinkable and a risk of explosion.<sup>iii</sup> Many possible contamination cases, however, are dismissed by industry and regulators because of a lack of baseline data. Without groundwater quality information prior to fracking, it is impossible to prove the cause of contamination.

Groundwater can become contaminated with:

- Chemicals added to hydraulic fracturing fluid. A 2011 US House of Representatives study found that 750 different chemicals are used for fracking and 29 of them are either (1) known or possible human carcinogens, (2) regulated under the Safe Drinking Water Act for their risks to human health, or (3) listed as hazardous air pollutants under the Clean Air Act.<sup>iv</sup>
- Heavy metals, naturally occurring radioactive materials, hydrocarbons (such as methane or oil), or other naturally occurring contaminants that may be transported into aquifers as a result of drilling operations.

Fracking can contaminate groundwater in the following ways:

- Well-casing, construction, or cement failure. A recent study suggests 6-9% of fracking wells in Pennsylvania experience some type of integrity problem.<sup>v</sup>
- Natural fractures and faults. There is increasing evidence that over the long term, methane gas and fluids can migrate into underground aquifers. The presence of naturally occurring faults, as is the case in California, can lead to increased levels of migration and elevate the risk of groundwater contamination.<sup>vi</sup>

## **Central Valley drinking water:**

Much of the drinking water in the Central Valley, where the majority of fracking in California occurs, is already already contaminated. Ninety percent (90%) of Central Valley residents rely on groundwater and hundreds of thousands of people in that region may not have access to a reliable supply of safe drinking water.<sup>vii</sup> Any increase in groundwater contamination in this region is unacceptable. Monitoring near fracking is essential in protecting drinking water sources.

## **Agriculture and food supply:**

Fracking operations are water-intensive. A typical fracking operation uses between 300,000 and 5 million gallons of water. Depletion of water resources from over-use and contamination could have major effects on California agriculture and the state's economy. In the Central Valley and Central Coast, some the nation's richest agricultural lands may be jeopardized by an increase in fracking.

## **Tracking quantity and source of water used for fracking**

California has suffered from long-term water shortages. The high volume of water used for fracking needs to be monitored and tracked to ensure that other high priorities such as agriculture, drinking, and environmental uses are not compromised. AB 982 would require advance notice of the planned source and quantity of water to be used in fracking operations.

## **Support:**

Clean Water Action (Sponsor)

Aromas Cares for our Environment (ACE)

Citizens Coalition for a Safe Community

California Coastal Protection Network

California League of Conservation Voters

Coastal Environmental Rights Foundation

County of Santa Barbara

Calluegas Water District

Earthworks

Environment California

Environmental Defense Center

Environmental Working Group

Grassroots Coalition

Los Angeles Waterkeeper

League of Women Voters

Natural Resources Defense Council

Physicians for Social Responsibility-Los Angeles

San Diego 350.org

San Francisco Baykeeper

Sierra Club California

The Wildlands Conservancy

## **Contact:**

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<sup>i</sup> Pro Publica Nov 13, 2008 <http://www.propublica.org/article/buried-secrets-is-natural-gas-drilling-endangering-us-water-supplies-1113>

<sup>ii</sup> Pro Publica March 20, 2012 <http://www.propublica.org/article/so-is-dimocks-water-really-safe-to-drink>

<sup>iii</sup> Bloomberg News Sept 26, 2012 <http://www.bloomberg.com/news/2012-09-26/diesel-compounds-found-in-water-near-wyoming-fracking-site-2-.html>

<sup>iv</sup> US House of Representatives Committee on Energy and Commerce April 2011 "Chemicals Used in Hydraulic Fracturing"

<http://democrats.energycommerce.house.gov/sites/default/files/documents/Hydraulic-Fracturing-Chemicals-2011-4-18.pdf>

<sup>v</sup> Ingraffea, Anthony "Fluid migration mechanisms due to faulty well design and/or construction: An overview and recent experiences in the Pennsylvania Marcellus play" Oct. 2012 <http://www.damascuscitizensforsustainability.org/wp-content/uploads/2012/11/PSECementFailureCausesRateAnalysisIngraffea.pdf>

<sup>vi</sup> Warner, Jackson et al. Proceedings of the National Academy of Sciences "Geochemical evidence for possible natural migration of Marcellus Formation brine to shallow aquifers in Pennsylvania" <http://www.pnas.org/content/early/2012/07/03/1121181109.full.pdf+html>

<sup>vii</sup> California State Water Control Board "Communities That Rely on Contaminated Groundwater" <http://groundwater.nitrates.ucdavis.edu/files/138961.pdf>