

Lags in fracking regulations: Independent analysis reveals risks to water resources

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(Phys.org) —A new report on hydraulic fracturing ("fracking") in California warns of the risks of irreversible contamination of surface and groundwater near oil drilling sites, unless the technique is carefully monitored and controlled. The report *Regulation of Hydraulic Fracturing in California: A Wastewater and Water Quality Perspective* is an independent analysis produced by the UC Berkeley School of Law's

Center for Law, Energy & the Environment (CLEE) and its new initiative, the Wheeler Institute for Water Law & Policy (Wheeler Institute).

Fracking is a technique that injects highly pressurized chemical fluids into underground rock to create cracks that release tightly bound oil or gas. It's become a financial boon to fossil fuel companies nationwide, but it comes with inherent dangers.

The risks of fracking include toxic chemicals and known carcinogens that can seep into ground and surface waters, posing a threat to human health, aquatic life, and ecosystems. If the fracking wells and [wastewater](#) are mishandled, according to the report, the results may be harmful, costly, and impossible to reverse.

The general practice of fracking is not new—oil and gas producers have employed it in California for many decades. What is new, and potentially alarming, are projections of dramatically increased activity in California driven by advanced technologies and a demand for oil.

"The rapid spread of fracking has outstripped the ability of state agencies to effectively monitor and regulate it. Our recommendations include a greater investment in industry oversight, stronger regulations, and heightened inter-agency cooperation," said Jayni Foley Hein, a report co-author and executive director of CLEE. "Regulators need to protect the public interest by demanding greater transparency and increased accountability across all fracking operations."

The report coincides with a request by the state's Department of Conservation for comment on its "discussion draft" regulations. The agency's draft addresses elements such as well construction, testing, and storage and handling of wastewater. But it fails to adequately address risks to California's water resources, according to Hein.

"The draft regulations are an important first step, but the state must widen its scope to protect public health and avoid any contamination of surface and [groundwater](#)," Hein said.

In an unusual twist that is contrary to its role as a leader in environmental protection law, California lags behind other states on [hydraulic fracturing](#) regulation. Wyoming, Ohio, and other states set stronger standards for transparency, safety, and environmental stewardship. But, even in those cases, gaps in agency oversight may have contributed to water contamination and greater seismic activity.

California needs to raise the bar even higher, said co-author Michael Kiparsky, associate director of the Wheeler Institute.

"Part of the challenge of fracking is that the technology is constantly evolving," said Kiparsky, an environmental scientist. "It's essential that regulators not only understand the impacts of new technologies, but also study the lessons learned elsewhere to prevent an increased risk of earthquakes, water pollution, and toxic air emissions."

Kiparsky said scientific uncertainty, due to a lack of peer-reviewed studies, drives the need for more research on fracking's potential risks.

The report's key recommendations include:

Advance notice and disclosure

- Operators should provide at least 30 days public advance notice of any hydraulic fracturing event.
- State agencies should develop a formal process for concerned citizens to respond to proposed fracking events in their communities.

Tracking waste and disposal

- Agencies should require more extensive recordkeeping and reporting on disposal of wastewater.
- Agencies should consider using new techniques like tracers to identify and track potential contaminants.

Protecting underground sources of drinking water

- The state should strengthen its definition of underground sources of drinking water to match or exceed that of U.S. Environmental Protection Agency (EPA).

Well abandonment

- California should develop a well closure and monitoring program, following EPA guidelines.

Seismic risk

- Underground injection should be prohibited near risky faults based on a seismic analysis.

Reuse and recycle

- The state legislature should consider tax exemptions to encourage recycling of fracking wastewater.

Treatment

- Regulations should explicitly prohibit direct discharge of wastewater from oil and gas operations to publicly-owned treatment works until the EPA issues pretreatment guidelines.
- The state should fund a comprehensive scientific review of the risks to California water supplies from fracking wastewater.

More information: www.law.berkeley.edu/files/cce...turing_April2013.pdf

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