

# Utah Department of Natural Resources

## Division of Oil, Gas and Mining



### Hydraulic Fracturing Regulation in Utah

- Hydraulic fracturing (HF) has been an operational practice for completing and stimulating oil and gas wells in Utah since the earliest dates of drilling in the state. State government regulation of the practice commenced with creation of the Utah Oil and Gas Conservation Commission in 1955.
- In all of the historical records of the Division of Oil, Gas, and Mining (DOGM), there has never been a verified case of HF causing or contributing to contamination of water resources.
- As the attached comparison chart shows, there are a number of existing regulatory requirements that allow monitoring and oversight of HF by DOGM.
- The geology in Utah dictates that hydrocarbon development in the state will necessarily be in deeper horizons than may be the case in other states. Statewide statistics indicate that less than 2 percent of all wells drilled annually are shallower than 1,000 ft. in depth. In calendar year 2011, only 3.5 percent of wells were drilled shallower than 5,000 ft. in depth. As usable ground water resources are generally shallower than 1,000 ft. in depth, deeper oil and gas well depths greatly minimize the potential for problems stemming from HF, and current regulation in Utah has been effective in avoiding such problems.
- Geography in Utah also minimizes the risk of HF problems relative to human population. All existing development of hydrocarbon resources occurs far from populated areas of the state. There is no hydrocarbon development along the Wasatch Front where the majority of Utah's population resides, and the most highly drilled areas of the state are in the most sparsely populated areas of the Uinta Basin in eastern Utah.
- On-site inspection of oil and gas wells is a key component of DOGM's regulatory program. All wells drilled on state or private lands in Utah are subject to a rigorous inspection program that includes: inspection and witnessing of well control equipment tests, casing/cementing operations, follow up to third party complaints, general compliance verification, drilling operations, emergency response, final land restoration/bond release, well plugging, production/environmental, and workover/recompletion. In 2011, nearly 7,200 such on-site inspections were performed by DOGM field operations staff (there are currently about 3,300 non-plugged wells on state and private lands within Utah)
- The regulatory processes of DOGM (that include permitting, inspection, compliance, and enforcement) are effective in ensuring the responsible development of Utah's resources with due regard for and protection of the environment. The professional staff of DOGM has the local knowledge and expertise to address the technical and scientific challenges posed by Utah's unique geology and geography. A nationwide process of HF rulemaking by the U.S.BLM may have noble intent, but will likely be no more effective in achieving better oversight of HF operations and do so at substantial cost of manpower and time for both government and private sector organizations.

***"Hydraulic Fracturing 101: What Every Representative, Environmentalist, Regulator, Reporter, Investor, University Researcher, Neighbor, and Engineer Should Know About Hydraulic Fracturing Risk"***

***By George E. King, Apache Corporation***

<b>Conclusion from Paper</b>	<b>How Utah Rules Address</b>
1. Fracture treatments do not penetrate fresh-water supplies in a properly constructed wellbore	R649-3-6 Drilling Operations, R649-3-8 Casing Program, R649-3-9 Protection of Upper Productive Strata, R549-3-13 Casing Tests
2. The potential for even a small amount of chemical contamination from fracturing is less than one in a million fractures	R649-3-15 Pollution and Surface Damage Control
3. Height of fracturing growth is not far above a targeted hydrocarbon zone, and separated by thousands of feet from shallower fresh-water sands	R649-3-7 Well Control, R649-3-15 Pollution and Surface Damage Control
4. The potential for chemical contamination comes exclusively from road transport, surface storage, and surface mixing of fluid components along with failures in well architecture from inadequate construction methods	R649-3-6 Drilling Operations, R649-3-8 Casing Program, R649-3-9 Protection of Upper Productive Strata, R549-3-13 Casing Tests, R649-3-15 Pollution and Surface Damage Control, R649-3-16 Reserve Pits and Other On-site Pits, R649-9-2 General Waste Management
5. Frequency of spills or leaks from transport, storage, and well construction can be sharply reduced with proper attention	R649-3-6 Drilling Operations, R649-3-15 Pollution and Surface Damage Control, R649-3-16 Reserve Pits and Other On-site Pits, R649-9-2 General Waste Management
6. There was no documented case of fracture chemical migration to a fresh-water aquifer or to the surface from zones deeper than 2,000 ft.	R649-3-6 Drilling Operations, R649-3-4 Permitting of Wells to be Drilled, Deepened or Plugged Back, R649-3-8 Casing Program, R649-3-9 Protection of Upper Productive Strata
7. The low risk of leak or spill events can be further reduced by proper design of chemical components used in fracturing	R649-3-23 Well Workover and Recompletion
8. Special cases of fracturing shallow hydrocarbon zones (less than 2,000 ft. in depth) and/or fresh water zones with less than 1,000 ft. of separation from fracturing zones requires special attention from regulators	R649-3-6 Drilling Operations, R649-3-4 Permitting of Wells to be Drilled, Deepened or Plugged Back, R649-3-23 Well Workover and Recompletion
9. Methane presence is commonly recorded in water wells across the country and may predate (or be entirely unassociated with) any drilling or fracturing in areas of petroleum development – special	R649-2-5 Right to Inspect, R649-2-6 Access to Records, R649-2-12 Tests and Surveys, R649-3-6 Drilling Operations

<p>investigations may be justified</p>	
<p>10. Potential for increasing methane in nearby water wells from oil and gas well development can be increased by poor cementing in surface and production strings of casing</p>	<p>R649-3-6 Drilling Operations, R649-3-8 Casing Program</p>
<p>11. Transparency is rational and reasonable for all parties involved in or affected by petroleum development</p>	<p>R649-2-5 Right to Inspect, R649-2-6 Access to Records, R649-2-12 Tests and Surveys, R649-3-6 Drilling Operations, R649-3-21 Well Completion and Filing of Well Logs, R649-3-23 Well Workover and Recompletion, R649-3-32 Reporting of Undesirable Events, R649-8-1 General Report Forms, R649-9-2 General Waste Management</p>
<p>12. Scientific explanations and research do not appear to have been as well reported as other less objective reports of hydraulic fracturing problems</p>	<p>This item concerns public relations and media reporting of oilfield development and associated issues. There are no regulatory requirements in this area, but as a public agency, the Division of Oil, Gas, and Mining strives to keep the public informed with accurate record-keeping and objective reporting of pertinent information.</p>

Jrb, 4/19/2012



**GARY R. HERBERT**  
*Governor*

**GREGORY S. BELL**  
*Lieutenant Governor*

# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

**MICHAEL R. STYLER**  
*Executive Director*

### Division of Oil, Gas and Mining

**JOHN R. BAZA**  
*Division Director*

February 21, 2012

### Notice to Oil and Gas Operators

Re: Hydraulic Fracturing/FracFocus.org

Although the process of hydraulic fracturing has been a commonly used method for obtaining production from oil and gas wells for many years in Utah and worldwide, this process has become an increasingly controversial issue with the public. Currently there are no conclusive studies that show examples of ground water contamination or public health issues resulting from hydraulic fracturing. However, there is still a great amount of public debate concerning the subject. The Division of Oil, Gas and Mining believes that in order to address some of the public anxiety concerning the process of hydraulic fracturing, it would be beneficial to the petroleum industry in Utah to voluntarily report the chemical content of hydraulic fracturing fluids to the website FracFocus (<http://fracfocus.org>).

FracFocus is the national hydraulic fracturing chemical registry website. This website is a joint project of the Ground Water Protection Council and the Interstate Oil and Gas Compact Commission. The website is both educational and informative and an excellent resource for those seeking information on hydraulic fracturing.

After a hydraulic fracture stimulation is performed, the Division would ask the operator to post on the FracFocus Chemical Disclosure Registry the following stimulation detail:

Fracture date, state, county, API number, operator name, well name, location, production type, true vertical depth, total water volume, and hydraulic fracturing fluid composition as follows:

- (1) Trade name
- (2) Supplier
- (3) Purpose
- (4) Ingredients
- (5) Chemical abstract number
- (6) Maximum ingredient concentration in additive
- (7) Maximum ingredient concentration in hydraulic fracturing fluid

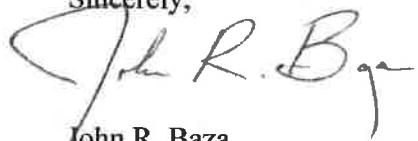


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On this website, the public can search for information about the chemicals used in the hydraulic fracturing of oil and gas wells by specific well and location. If you are not familiar with the FracFocus website, the Division encourages you to visit the website to acquaint yourself with the information that is being reported. Other oil and gas producing states have made similar requests or established regulatory requirements concerning hydraulic fracturing and the use of the FracFocus website. The Division strongly believes that through the openness of this request that it will promote the public's trust of the petroleum industry. This will continue to enhance a strong community support for the development of oil and gas, educate the public, and alleviate some of the so-called "mysteries" surrounding hydraulic fracturing. If you have any questions about this request for the voluntary efforts of Utah's petroleum industry, please direct them to the Utah Division of Oil, Gas and Mining at [OilGasMining@utah.gov](mailto:OilGasMining@utah.gov).

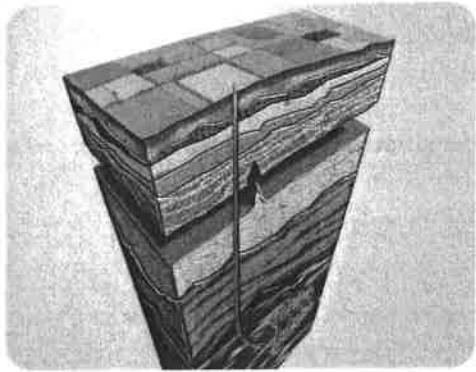
Sincerely,



John R. Baza  
Director

## FACT SHEET

# Hydraulic Fracturing



Hydraulic fracturing, also known as 'fracing', is a technique that uses a specially blended liquid which is pumped into a well under extreme pressure causing cracks in rock formations underground. These cracks in the rock then allow oil and natural gas to flow, increasing resource production.

To ensure that neither the fluid that will eventually be pumped through the well, nor the oil or gas that will eventually be collected, enters the water supply, steel surface or intermediate casings are inserted into the well to depths of between 1,000 and 4,000 feet.

### *What is FracFocus?*

FracFocus is the national hydraulic fracturing chemical registry Web site.

The site was created to provide the public access to reported chemicals used for hydraulic fracturing within their area as well as objective information on hydraulic fracturing, the chemicals used, the purposes they serve and the means by which groundwater is protected.

FracFocus is managed by the Ground Water Protection Council and Interstate Oil and Gas Compact Commission, two organizations whose missions both revolve around conservation and environmental protection.



### *Looking for a Well Site Near You?*

FracFocus allows users to search for nearby well sites that have been hydraulically fractured to see what chemicals were used in the process.

The system uses a Google maps like interface that allows users to search for hydraulic fracturing records by pointing at their locations on a map and zooming in for closer inspection.

Chemicals serve many functions in hydraulic fracturing. From limiting the growth of bacteria to preventing corrosion of the well casing, chemicals are used to ensure that the fracturing job is effective and efficient.

The FracFocus site contains a guide to give users more information about the chemicals listed in the report generated for their area.



### *Regulations by State*

States are the primary regulators of hydraulic fracturing. States have comprehensive laws and regulations to provide for safe operations and to protect drinking water sources.

As a part of these regulations, several state governments require companies to disclose chemicals used specifically to FracFocus, with other states quickly following suit.

FracFocus allows users to easily search for state-by-state regulations for hydraulic fracturing.