



HYDRAULIC FRACTURING AND DISCLOSURE IN COLORADO

There is a lot of misunderstanding about what is and is not regulated in drilling and hydraulic fracturing – so we've provided a step-by-step overview of Colorado's rules.

1. In Colorado, operators have to apply to get a permit to drill describing all of their surface and downhole activities through the Colorado Oil and Gas Conservation Commission (COGCC). This includes well design, location spacing, operation, water management and disposal, waste management and disposal, air emissions, wildlife impacts, surface disturbance, and worker health and safety.
2. COGCC oversees all drilling operations including prevention of surface spills, ensuring adequate cementing through cement bond logs and mechanical integrity tests, and monitoring the surface casing and production casing annulus (Bradenhead) during fracturing operations for signs of any fluids migration.
3. Information related to the contents of hydraulic fracturing are disclosed to the website www.Fracfocus.org on a well by well basis. FracFocus, which is maintained and run by the Groundwater Protection Council, lists all chemicals used in the fracture stimulation with their Material Safety Data Sheets.
4. State-level oversight and enforcement is important because drilling practices vary according to the unique geological characteristics of the region. State level scrutiny ensures that agency officials understand the operations in each basin. By law, state regulations must be at least as protective as federal standards.

CONCERNS WITH FRACTURING FLUID

First, stakeholders are concerned about what is in these fluids. Fracturing fluids vary based on the specific requirements of the formation, but they generally contain 99.5 percent water and sand. The remaining chemicals are used to facilitate the flow of sand into the formation. These chemicals pose serious hazards when full strength, and our operators handle them extremely carefully to ensure personnel health and safety is protected and surface spills are prevented. Remember – in fracturing, all chemicals combined are diluted to less than one half of one percent of the fluid! See our Hydraulic Fracturing Fact Sheet for more information about hydraulic fracturing fluid.

Second, stakeholders are concerned about the potential of fracturing fluids to be released into underground sources of drinking water from the fractures created in the hydrocarbon formation. In fact, fracturing has too small of an area of influence to release fluids through thousands of feet of rock to reach underground aquifers. The volume of fluid for each fracture treatment is individually designed to impact a few hundred feet of lateral growth in the reservoir, not thousands of vertical feet.

In reality, our industry has to focus on two areas to prevent impacting underground sources of drinking water: **(1) preventing surface spills**, and **(2) ensuring casing protection**. Both of these areas are currently regulated in Colorado. We work closely with regulatory agencies and communities to continue to prevent releases in these areas.



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COLORADO REQUIRES DISCLOSURE

COGCC mandates all fractured wells to be catalogued on www.FracFocus.org. Chemical Inventory and Disclosure, requires the following of operators:

- Maintain material safety data sheets (MSDS) for any chemical products brought to a well site for use downhole, including for hydraulic fracturing.
- Maintain a chemical inventory for any chemical product used downhole, including hydraulic fracturing, in cumulative amounts exceeding 500 pounds (about a standard barrel's worth) in any quarterly reporting period.
- Identify trade secret chemical products with the COGCC. Forms are required to justify its trade secret status.
- Identify constituents of trade secret product if requested by COGCC for a spill response or landowner contamination complaint; information will be held confidential.
- Supply trade secret information to a health professional who makes a written request and executes a confidentiality agreement

FRACFOCUS

The online hydraulic fracturing chemical disclosure registry website or www.FracFocus.org was developed by the Groundwater Protection Council (GWPC) and the Interstate Oil and Gas Compact Commission (IOGCC). The database collects information from oil and gas operators around the country.

Colorado rules require reporting on all wells hydraulically fractured on and after April 1st, 2012. Thousands of wells had been documented since April 2011 on a voluntary basis. The registry details the chemicals supplier, the purpose of use, the ingredients, the Chemical Abstract Service (CAS) number, the maximum concentration in the additive, and the maximum concentration in the hydraulic fracturing fluid. When searching for wells, an interactive map is available to easily identify nearby wells. Operators require a technician to provide details for each well, including total depth and water volume, all of which are catalogued with chemicals, and easily searchable through FracFocus.

The website also provides information regarding the hydraulic fracturing process by providing answers to frequently asked questions, and information about site set-up, water management, and subsurface fluid physics. There are additional details on groundwater protection, water well construction and testing, water usage, and indicators of contamination. Plus, FracFocus provides links via an interactive map for contact information to each state's oil and gas regulating body.