

## Articles

### Developing Frac Issues – Newly Proposed Completion Rules for Wyoming & Pennsylvania

**Paul Bohannon**

March 29, 2010

In this alert we provide background information relating to the proposed National Frac Act, EPA's announced study of the frac process, and the just-released new completion rules for Pennsylvania and Wyoming.

Due to the well-publicized Marcellus Shale issues (see, e.h., <http://www.post-gazette.com/pg/10077/1043867-100.stm>), certain Congress members are seeking to repeal the exemption for hydraulic fracturing in the Safe Drinking Water Act H.R. 2766 and S. 1215 (both, 111th Congress), entitled "Fracturing Responsibility and Awareness of Chemicals Act of 2009" that was introduced with 53 House sponsors and seven Senate sponsors. The bills impose the obligation to disclose chemical use over the web and to medical providers. This obligation, when requested under medical emergency conditions by providers, applies without regard to proprietary confidential rights (though the obligation to maintain confidentiality can still be imposed as appropriate). The bills also require permitting.

These bills have been referred to the Senate Environment and Public Works and House Energy and Commerce Committees.

Last week, EPA responded quickly, proposing to do a detailed study of hydraulic fracturing to evaluate potential risks to surface and ground water. EPA's initial budget for the study is \$1.9 million, and it is expected to take about two years.

Wyoming issued its proposed changes to drilling and completion rules this week. Among the changes are requirements that owners/operators demonstrate that frac'ing will not endanger fresh and potable water sources. The specified intent is to require O/Os to provide additional information to the Commission (though the Commission will not control frac'ing techniques). The O/O must now provide notice of intent to frac on an Application for Permit to Drill, and detail: (i) permitted water supply wells within ¼ mile of the drilling or spacing unit, whichever is less; (ii) upper hole geology and hydrology from surface to casing surface set point and specify methods to avoid invasion and maintain well and hole control; (iii) casing and cementing shall be in a manner not to cause oil, gas, or fresh water source loss, with specific information required; (iv) cement additives and bond logs requirements; (v) "daily" drilling information to assure proper containment of frac stimulation treatment in the productive interval; (vi) details on downhole problems; (vii) information on base fracture fluid source, chemical additives and concentrations, additive type (biocide, acid, breaker, brine, etc.); (viii) use of BTEX and other petroleum distillates are prohibited except in the hydrocarbon bearing zones, without permission; and (ix) information regarding waste materials.

Hydraulic fracturing involves drilling into a formation and injecting water mixed with sand and chemicals under high pressure. The mixture cracks open the shale while the sand holds open the fractures, allowing the natural gas to flow more freely to the surface. Shale production areas, like the Barnett Shale, involve frac jobs consuming up to three times as much water (fresh water), and with most wells being frac'd multiple times (perhaps as many as ten times). Nevertheless, in the overall picture, the actual percentage of water consumption, in relation to other uses, is not as significant. Confounding this are recent climate change studies that indicate the Barnett Shale area will be suffering moderate water demand conflicts (industry, consumer and agricultural) in the next 50 years. So, there will be some continuing pressure to address the water consumption issue.

In the meantime, the Texas Railroad Commission (RRC) has looked at recycling possibilities. The issue is that return water flow is salty — fracs use fresh water. Of the few pilot projects authorized, only one has been moderately successful. It involves a salinity separation by distillation. The total volume treated to date is small. It is likely that efforts in the recycling arena will continue.

## Articles

The chemicals make up a small part of the overall mix — less than 0.5 percent by volume — but often include hazardous substances such as acids and compounds found in cleaners and antifreeze. While fracturing has been used for years, environmental concerns have come to the forefront as Marcellus Shale frac'ing increased in Pennsylvania.

Private litigant claims are being pursued in Pennsylvania, Colorado and Wyoming, alleging that drinking water has been contaminated by fracturing fluids or natural gas.

The Texas RRC reports no real aquifer contamination caused by frac'ing. The EPA's study is to evaluate that conclusion.

So, where might this head? It's too early to tell. However, a couple of things can be considered. First, the shale gas production is very important to the U.S. gas supply, and therefore, to the industry. As such, it is very important to our economy. Perhaps a "worst case" scenario would be regulation of frac'ing under the Underground Injection Control (UIC) Program, coupled with streamlined permitting by way of rule. This would place an emphasis on monitoring, recordkeeping and self-reporting.