

Comments
On
EPA's Approach to Developing Permitting Guidance for Oil and
Gas Hydraulic Fracturing Activities Using Diesel Fuels
Submitted by
National Ground Water Association(NGWA)
June 22, 2011

The following comments relate to U.S. EPA's development of guidance for oil and gas hydraulic fracturing activities using diesel fuels. The comments are directly applicable to the power point presentation made June 15, 2011 during an EPA webinar for public stakeholders.

What Are Diesel Fuels, Slide 42: NGWA supports the inclusion of a specific definition of diesel fuels. An additional reference that may be of assistance in developing such a definition is the ATSDR toxicological profile for fuel oil (refer to Section 3.1 of the document at the second link below), which states that diesel fuels are commonly comprised of 64% aliphatic hydrocarbons, 35% aromatics, and 1-2% olefinic hydrocarbons.

<http://www.atsdr.cdc.gov/toxprofiles/TP.asp?id=516&tid=91>

<http://www.atsdr.cdc.gov/toxprofiles/tp75-c3.pdf>

Siting Considerations and Area of Review, Slides 44 and 45: In addition to assessing the geologic and hydrogeologic conditions that impact the integrity of the injection zone and confining formation, NGWA also supports the recommendation that abandoned wells, e.g. oil and gas, water wells, and those related to mining operations, be identified in the area of review prior to injection operations. (In some areas, this may require more rigorous on-the-ground reconnaissance due to the lack of historical well record information.) Abandoned wells provide a potential conduit to short-circuit geologic confining layers and allow fracturing fluids and lower quality formation fluids to migrate to drinking water sources. Abandoned wells also can serve as conduits for fluids released at the surface to contaminate shallow groundwater.

Area of Review, Slide 45: NGWA supports calculating a zone of endangerment rather than a fixed radius around the well and its horizontal extensions. Major fractures or faulting should be included in siting considerations. The permit application should include groundwater modeling to predict groundwater flow and the hypothetical fate and transport of hydrocarbon compounds in the aquifer(s) at risk.

Monitoring and Reporting, Slide 48: Besides the monitoring of the injection well and the fracturing fluids, NGWA supports monitoring that would provide a baseline assessment of the water quality in the first formation that contains an underground source of drinking water which is above the injection zone. The monitoring would be used to identify potential breaches of confinement. The groundwater



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analytical monitoring protocol should include at least the full list of VOCs and SVOCs with comparison of the results to the MCLs.

The length of time that monitoring should take place should be based on a consideration of not only the actual injection operation but also groundwater flow conditions so as to include any lag time between injection operations ceasing and travel time to the monitoring point.

In addition, NGWA generally encourages well owners to test the quality of their water regularly. As an alternative, resource monitoring would be an option to provide a baseline assessment of the current quality of underground drinking water sources that are or potentially could be used by residents in the surrounding area.

Well Construction Considerations, Slide 46: In addition to casing and cementing the wells, the compatibility of the injection fluids and the cement compositions should be evaluated to ensure compatibility with the well materials and the formation. Cement bond logs should be run to verify the bond between the well casing and the formation. Mud logging should be used to determine the actual intervals for setting the casing rather than relying on an arbitrary set distance.

Hydraulic Fracturing Permit Application, Slide 51: Include an inventory of wetland and other surface waters within the zone of endangerment. The permit application should include the results of groundwater modeling to predict groundwater flow and hypothetical fate and transport of hydrocarbon compounds in the aquifer(s) at risk.

Financial Responsibility, Slide 53: NGWA supports a requirement that the owner or operator demonstrate and maintain financial assurance (trust fund, bond, or other approved mechanisms) to close and abandon the injection operation. Additionally, NGWA suggests that the owner or operator also demonstrate and maintain financial assurance as noted above to address impacts to underground sources of drinking water and third-parties, such as household or public drinking water owners/operators. The financial assurance for both should be maintained until a period of time after operations cease. The period would be determined by groundwater flow conditions.

The National Ground Water Association is a not-for-profit professional society and trade association for the groundwater industry. Our more than 12,000 members from all 50 states include some of the country's leading public and private sector groundwater scientists, engineers, water well contractors, manufacturers, and suppliers of groundwater related products and services.

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