



Response to the PA Medical Society Call for a Moratorium on Hydraulic Fracturing in Pennsylvania

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Pennsylvania Council of Professional Geologists

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In a recent press release, the Pennsylvania Medical Society called on Pennsylvania to halt oil and natural gas exploration and development, with a moratorium on hydraulic fracturing, citing, without support, unspecified deleterious health effects being experienced by communities. Such a call for action is inconsistent with the findings of every governmental, university and independent study on the environmental effects of hydraulic fracturing. Additionally, the Society has overstepped the limits of the medical profession's authority by offering an opinion about which the respective members have no educational or experiential qualifications and do not possess the required professional license to make such a public proclamation. For the reasons set forth herein, the Pennsylvania Council of Professional Geologists (PCPG) disagrees with the call for a moratorium on hydraulic fracturing and, rather, calls on the Pennsylvania legislature to continue its course of balancing human health, environmental and economic concerns.

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First, a distinction is necessary because lay persons have confused the technique of hydraulic fracturing with oil and natural gas exploration and development operations in general. In fact, hydraulic fracturing comprises one specific stimulation method applied to some oil and natural gas wells. The risks identified by independent regulatory and university studies are associated with surface or near-surface oil and gas operations and not with the hydraulic fracturing stimulation method, specifically. That risk is also shared by many other non-oil and gas industrial and commercial operations.

The hydraulic fracturing process is used in both vertical and horizontal wells, in both oil and natural gas wells, in water supply and geothermal wells and is not strictly utilized in unconventional or shale gas wells. Hydraulic

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fracturing is a controlled process which has been deployed in more than two million stimulations in over one million wells in 27 states over a 67-year period without one single instance of proven adverse impact to underground fresh water supplies (API). That impressive record has been recognized by government agencies including Pennsylvania Department of Environmental Protection (PADEP, 2010, 2015), U.S. Environmental Protection Agency (USEPA, 2015), U.S. Department of Energy (USDOE, 2014): as well as countless universities across the country, and is but one of the multiple reasons that hydraulic fracturing is the industry preferred and government permitted method for oil and natural gas formation stimulation and completion. Government officials, up to and including the current and all past administrators of the EPA, have stated publically that hydraulic fracturing is safe and can be conducted in a manner which will continue to ensure public and environmental protection.

PCPG recognizes the medical profession's expertise in assessing the cause and effect relationship between biological or chemical disease agents and their potential to cause negative public health effects. However, unless there is a complete route of exposure between a community and a disease agent, there is no public health risk. Professional geologists assess the same cause and effect relationship when studying Earth processes. In the case of hydraulic fracturing of an oil or natural gas well, even assuming the substances being considered were injurious to public health, there would need to be a complete exposure route to enable hydraulic fracturing fluids or formation waters to migrate upward through the Earth's bedrock from the fracturing zone at great depths (up to 1.8 miles) to shallow underground water supplies. The hydraulic fracturing process is incapable of overcoming the downward lithostatic pressure of several thousand feet of intervening rock strata and creating a complete exposure route between the stimulation zone and drinking water supplies. The relatively large distance between the stimulated zones and shallow underground water supplies and the layering of the intervening rock strata collectively inhibit such migration from occurring.

Second, medical professionals are not qualified to make a determination regarding the potential transport of hydraulic fracturing fluids in the subsurface environment. Consequently, they are unqualified to publish a position which has a presumption that such transport not only occurs, but is so inherent to the hydraulic fracturing process that a wholesale moratorium is necessary.

Pennsylvania's government recognizes that the specialized knowledge and expertise to assess the behavior of fluids within the Earth rests with Licensed Professional Geologists for one purpose: public protection. The Pennsylvania legislature defines the practice of geology as:

"... describing the natural processes acting on Earth materials, gases or fluids...predicting and locating natural or man-induced phenomena which may be useful or hazardous to mankind..."

Licensed Professional Geologists have the education and expertise, and consequently are the professionals with the training and experience to evaluate the behavior and movement of liquids and/or gases in the Earth.

As the largest organization representing Pennsylvania Licensed Professional Geologists, it is the position of PCPG that the hydraulic fracturing process itself does not pose an unacceptable risk to water supplies or to

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persons living and working in the Commonwealth. PCPG has published a position paper at www.pcpge.org which details the Council's complete position on shale gas development.

Pennsylvania's oil and natural gas laws and regulations are among the most stringent in the country and they provide for the greatest degree of environmental and public protection. PCPG supports the legislature and the PA Department of Environmental Protection in their very successful efforts to ensure oil and natural gas operations do not result in either human health or environmental risks while providing an unrivaled economic opportunity for Pennsylvania.

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