



The State of New Hampshire
Department of Environmental Services



Thomas S. Burack, Commissioner

February 17, 2015

The Honorable Robert Haeffler, Chair
Environment and Agriculture Committee
Legislative Office Building, Room 303
Concord, NH 03301

RE: HB 609-FN, "An Act relative to hydraulic fracturing"

Dear Chair Haeffler and Members of the Committee:

Thank you for the opportunity to testify on HB 609-FN. This bill would prohibit hydraulic fracturing as a method for natural gas and oil production in New Hampshire and also bar the collection, storage, treatment or disposal of wastewater generated from such hydraulic fracturing in the State of New Hampshire. The Department of Environmental Services (DES) offers information and comments, below, to assist the Committee in its consideration of the bill.

Hydraulic fracturing is a process of pumping a liquid, usually water, under high pressure into the subsurface to create fractures in certain rock formations to liberate and capture natural gas or petroleum that may be trapped there. The process generates large quantities of wastewater commonly known as "flowback." Flowback typically contains high concentrations of total dissolved solids (TDS), often in the range of five times that of sea water. Flowback may also contain petroleum and other contaminants in various concentrations. Wastewaters that contain high TDS and petroleum are challenging and costly to treat.

Hydraulic fracturing in other parts of the United States has raised various concerns. One of the concerns is that local groundwater drinking water supplies could become contaminated by flowback. Another concern is that the wastewater generated from the process must receive proper pretreatment before discharge to a wastewater treatment facility. High concentrations of TDS or petroleum products may interfere with conventional wastewater treatment processes and/or pass through the treatment facility without receiving adequate treatment. This could have a deleterious effect on surface water. However, pretreatment prior to discharge to a wastewater treatment facility, albeit costly, would most likely be feasible with the proper technology.

While DES would have concerns with the waste products generated by hydraulic fracturing, it is virtually certain, due to the geologic formations underlying New Hampshire, that the process would never actually be implemented in New Hampshire for the production of gas and oil. This is because the geologic history of New Hampshire precludes the occurrence of subsurface deposits of oil and gas. Any

potentially suitable host rocks of sedimentary origin, specifically organic-rich shales deposited in deep ocean basins, were strongly altered by extreme heat and pressure (i.e., transformed into crystalline metamorphic rocks) during plate collisions and mountain-building events hundreds of millions of years ago. Any hydrocarbons that might have been originally present in the rocks would have been driven off in the process long ago, so that no energy resources of this sort can possibly exist here today. Accordingly, we do not reasonably anticipate that the risks that this bill is intended to protect against would ever arise in the State of New Hampshire. Moreover, given the distance between New Hampshire and the closest states where hydraulic fracturing for oil and gas could occur (i.e., New York and Pennsylvania), and given the cost of transporting large volumes of such wastes, it is highly unlikely that any party would seek to dispose of such wastes at pollution abatement facilities in New Hampshire.

Thank you for your consideration in this matter. If you have questions or need additional information, please contact either Paul Heirtzler, Administrator of the Wastewater Engineering Bureau (Paul.Heirtzler@des.nh.gov, 271-2001), Frederick (Rick) Chormann, NH State Geologist (Rick.Chormann@des.nh.gov, 271-1975) or me at Thomas.Burack@des.nh.gov, 271-2958.

Sincerely,



Thomas S. Burack
Commissioner

CC: Representatives Timothy Horrigan and Gladys Johnsen
F. Rick Chormann, NH State Geologist