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"Natural Gas Drilling: Public Health and Environmental Impacts"

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Madame Chair, thank you for this opportunity to provide our perspective on how the state of Colorado is protecting public health and the environment while we develop our important, indigenous oil and gas resources. My name is David Neslin, and I am the director of the Colorado Oil and Gas Conservation Commission, the state agency responsible for regulating oil and gas development. I thank you and your colleagues for your thoughtful consideration and your efforts to gather the information necessary to properly evaluate these matters.

Colorado has a long and proud history of oil and gas development, with our first oil well dating back to 1862. As of 2009, we ranked fifth in natural gas production and tenth in oil production. Our diverse hydrocarbon resources encompass a variety of shale, tight sand, coal bed methane, and other formations that span the state. At the same time, we have a thriving resort and tourist economy, and our rugged mountains, clear streams, and abundant wildlife are an essential part of our heritage.

I want to focus most of my comments today on hydraulic fracturing, as it remains at the center of discussion on oil and gas drilling both in Colorado and nationally. Most of Colorado's 44,000 active oil and gas wells, as well as the thousands of new wells that will be drilled in the coming years, rely on hydraulic fracturing to create the permeability that allows fluid and gas to flow into the wellbore and be produced. It is not an understatement to say that this technology is absolutely vital to unlocking Colorado's rich natural gas and oil reserves. These reserves are a critical source of domestic energy for our state and nation, and their exploration, development, and production provides good-paying jobs for our residents and needed tax revenues for our communities.

But it is also essential that this development occurs in an environmentally responsible manner that protects our water resources generally and our drinking water specifically. This is a fundamental part of our regulatory mission, and something that everyone at our agency takes very seriously. To this end, our environmental professionals have investigated hundreds of groundwater complaints over the years. To date, we have found no verified instance of hydraulic fracturing harming groundwater. These investigations have been documented and are publicly available on our website.

In addition, since 2000, our Commission has required operators to collect pre- and post-development water quality samples from more than 1,900 water wells in the San Juan Basin in Southwestern Colorado, which has historically been one of our most productive natural gas-producing areas. Thousands of oil and gas wells in that Basin have been hydraulically fractured, and if fracturing fluids were reaching these water wells then you would expect changes in the chemical composition of the water. However, independent analysis of the data has found no statistically significant increase in chemical concentrations. A report documenting this analysis is likewise available on our website, and we have offered to share this data with the Environmental Protection Agency. We have also collected or required operators to collect similar data from about another 1,900 water wells in other gas and oil producing areas of the state.

I would also like to emphasize that during 2007 and 2008, our agency devoted substantial time and effort to updating our regulations to address a broad range of environmental issues associated with oil and gas development. This rulemaking process lasted 16 months, included testimony from 160 witnesses, and involved 22 days of hearings. The final rules strike a responsible balance between energy development and environmental protection, and they reflect input from dozens of local governments, oil and gas companies, and environmental groups, as well as thousands of our residents. And many other states have subsequently taken or are taking similar action, including Wyoming, Oklahoma, Ohio, Pennsylvania, and Arkansas.

These recent state rulemakings exemplify the benefits associated with state oversight and site-specific regulation, and they have specifically addressed hydraulic fracturing concerns. Colorado's amended rules contain various provisions to ensure that such activities do not harm our drinking water while recognizing the variety of issues at play in different regions of our state. For example,

- Rule 205 requires operators to inventory chemicals kept at drilling sites, including hydraulic fracturing fluids. This information must be provided to agency officials promptly upon request and also to certain health care professionals who sign a confidentiality agreement. This allows government officials and medical professionals to investigate and address allegations of chemical contamination associated with hydraulic fracturing, while protecting proprietary information.
- Rule 317 requires wells to be cased with steel pipe and the casing to be surrounded by cement to create a hydraulic seal and ensure that gas and fluids do not leak into shallower aquifers. Further, operators are required to run cement bond logs on all production casing to confirm that the cement has properly isolated the hydrocarbon bearing zones. Rule 341 requires operators to monitor well pressures during hydraulic fracturing and promptly report significant increases. Together, these requirements help to ensure that ground water is protected and that prompt action is taken if conditions arise that could lead to the subsurface release of hydraulic fracturing fluids.

- Rule 317B imposes mandatory setbacks and enhanced environmental protections on oil and gas development occurring near sources of public drinking water. These requirements provide an extra layer of protection for our public water supplies and help ensure that these critical resources are not inadvertently contaminated by energy development.
- Rule 608 requires operators developing coalbed methane wells to pressure test the wells and to sample nearby water wells before, during, and after operations to ensure that they are not contaminated by gas or other pollutants. Rule 318A requires operators in the DJ Basin in northeastern Colorado to do similar water well sampling before drilling. These rules provide an extra layer of protection for water wells located near oil and gas development.
- Rules 903, 904, and 906 impose updated requirements for pit permitting, lining, monitoring, and secondary containment to ensure that fluids in pits do not contaminate soil, groundwater, or surface water. These requirements will help ensure that any flowback of hydraulic fracturing fluids is properly contained.

These regulations are important, and we believe they have substantially improved our protection of water resources. But we have not stopped there. We are continuing to take proactive, cost-effective steps to ensure oil and gas development, and hydraulic fracturing in particular, protects public health and the environment. Let me address these here.

First, we and other states have worked closely with the Groundwater Protection Council and the Interstate Oil and Gas Compact Commission on the launch of a new website – www.fracfocus.org. This site, launching this week, encourages oil and gas operators to voluntarily provide information on the chemicals they use to hydraulically fracture a well. As you know, this has been a sensitive issue for the public and the industry, and we believe this on-line chemical registry will provide helpful information to citizens who want to better understand hydraulic fracturing or have questions about a particular well. Under our regulations that took effect in 2009, operators already must disclose fracturing constituents upon request by state regulators or health professionals. The website will compliment this requirement by providing a wealth of information to the public, including company names, well locations, construction details, fracturing fluid constituents, and chemical abstract numbers.

Second, we have arranged to have our hydraulic fracturing regulations professionally audited this summer by STRONGER – The State Review of Oil & Natural Gas Environmental Regulations. STRONGER is a national organization consisting of state regulators and industry and environmental representatives. Their review process is a collaborative undertaking involving an evaluation of our regulations and a comparison of them against a set of guidelines developed and agreed to by all participating parties. During the last eight months, STRONGER completed similar reviews of the Oklahoma, Pennsylvania, Ohio and Louisiana hydraulic

fracturing programs, and we are subjecting Colorado's program to a STRONGER review to determine whether further improvements can be made.

Third, the House of Representatives Committee on Energy and Commerce recently reported that about 1.3 million gallons of diesel fuel or fluids containing diesel fuel was used for hydraulic fracturing in Colorado during the period from 2005 through 2009. In response, we have launched our own investigation into this subject. This work involves both reviewing our own records as well as gathering information from service companies and operators. While we believe our regulations would have prevented contamination of drinking water supplies, we are collecting information independently to assess the situation.

Fourth, we continue to consider and assess public concerns that have arisen over hydraulic fracturing. As part of this, we have endeavored to give these matters the transparency they require and deserve. In February of this year, our Commission held a full public hearing to examine an allegation that hydraulic fracturing had contaminated a water well in southern Colorado. In this case, our Commissioners – a diverse board representing environmental, industry, local government and other sectors – unanimously determined that hydraulic fracturing had not impacted the well in question.

In summary, I want to stress how seriously we take this subject, and how Colorado is committed to ensuring that hydraulic fracturing protects public health and the environment. I also want to note that we are not unique, and that many other states are taking similar action. Our experience, and that of other states, demonstrates how hydraulic fracturing and other oil and gas activities are most effectively regulated at the state level, where highly diverse regional and local conditions are more fully understood and where rules can be tailored to fit the needs of local basins, environments and communities. In this way, we can ensure that our precious natural resources and environment are protected while providing our state and nation with a cleaner burning and vital source of domestic energy and allowing for the innovation and experimentation that are the hallmarks of our nation.