March 8, 2017

House Committee on Energy and Environment
Testimony of Brian Doherty on behalf of
Western States Petroleum Association

RE: HB2711

Chair Helm
Members of the Committee

Brian Doherty, testifying today on behalf of the Western States Petroleum Association. WSPA appreciates the opportunity to provide comments on HB2711 which would place a moratorium on the well stimulation technique commonly referred to as Hydraulic Fracturing.

WSPA represents companies that account for the majority of exploration and production, refining, marketing and transportation of crude oil and refined petroleum products in five western states including Oregon.

WSPA continues to support pragmatic approaches to regulating hydraulic fracturing, as long as those efforts balance public interest in safe and environmentally protective operations with technically proven and standard well drilling practices.

Let me begin by stating that stringent regulations by multiple state agencies are already in place in Oregon to ensure the safe and environmentally sound use of this longstanding, proven well stimulation technique. I attach the testimony and hydraulic fracturing factsheet submitted by Richard Riggs, then Assistant Director of DOGAMI regarding HB3415 (2015 Session).

The facts are hydraulic fracturing has been demonstrated, across multiple state and federal jurisdictions, to be a safe and effective technology that can be used to increase the recovery of hydrocarbons and deliver significant benefits, without adverse environmental effects.

Contrary to persistent, unsubstantiated claims, it is our hope the following facts can inform you that hydraulic fracturing has been safely used for decades, has not contaminated drinking water, does not use excessive amounts of water, and is comprehensively regulated in Oregon.

Here are the facts:

- **Hydraulic fracturing to produce oil is not new, untested and dangerous.**
- **Hydraulic fracturing to produce oil has been safely used to enhance the production of our critical domestic energy resources for over 60 years.**
- **Hydraulic fracturing to produce oil doesn't pollute groundwater and soil.**

- **Hydraulic fracturing does not use excessive amounts of water.**

Objective scientific study after study continues to verify these facts. See the attached factsheet on water use and hydraulic fracturing.

In addition, governmental officials have publically stated the following to reinforce these facts:

The EPA and the Interior Dept. for example, have a long record of reviewing and regulating hydraulic fracturing. Here are some highlights to underscore their conclusions:

- A landmark study in 2004 by the U.S. Environmental Protection Agency examined the risks of hydraulic fracturing in gas formations. That study concluded there was "little to no risk of fracturing fluid contaminating underground sources of drinking water during hydraulic fracturing."

- In 2011, *Lisa Jackson, former Secretary, U.S. Environmental Protection Agency*, had this to say: ***"In no case have we made a definitive determination that the fracking process has caused chemicals to enter groundwater."***

- And, again in 2012, she affirmed her view:
Hydraulic fracturing "has been around for decades, and there's a tremendous amount of misinformation out there about it, a lot of fear that I think is unfounded. "

- More recently in 2013, *Gina McCarthy, then U.S. EPA Administrator (11/4/13)* also weighed in about this well completion technique: ***"There's nothing inherently dangerous in fracking that sound engineering practices can't accomplish."***

- Similarly, in 2013, *Sally Jewell, then U.S. Secretary of the Interior, 11/8/2013* stated the following: ***"I'm not aware of any proven case where the fracking process itself has affected water quality."***

In conclusion, we ask you not to support a moratorium on hydraulic fracturing. You already have in place strident regulatory controls to ensure this valuable well stimulation technique is utilized safely.

Thank you.

OREGON DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

Ian Madin, Interim State Geologist

House Committee on Energy and Environment
April 7, 2015 Public Hearing on HB 3415
Oregon Department of Geology and Mineral Industries (DOGAMI) testimony

Chair Vega Pederson, Vice Chair Johnson, Vice Chair Reardon and Committee members, I'm Richard Riggs, Assistant Director of the Department of Geology and Mineral Industries, and manager of the agency's Mineral Land Regulation and Reclamation program.

Thank you for allowing DOGAMI to comment on HB 3415. DOGAMI takes no position on this bill. The Agency would however like to provide information about previous use of hydraulic fracturing technology in Oregon, the potential for future hydraulic fracturing in Oregon, and the current framework for regulating and permitting operations that propose hydraulic fracturing.

Oregon's has one operating gas field, near the town of Mist in northwest Oregon. The Mist field has produced gas from a sandstone reservoir since 1980. The reservoir is so permeable that hydraulic fracturing has never been required to economically produce gas.

Fracturing technology has only been used in Oregon in efforts to develop coalbed methane gas resources. Between 2005 and 2006, five coalbed methane wells were fractured at a site in Western Coos County, using nitrogen gas and silica sand, both chemically inert materials. As part of that process, DOGAMI required the company to sample background water quality of the formation's water, adjacent domestic water supply wells, waters from adjacent drainages, and waters from naturally occurring seeps and springs. To date, DOGAMI has not received notice of any impacts to water supply wells or other waters of the State. The methane wells proved to be uneconomical for gas production, and the operator plugged them with cement. Six additional wells remain cased and sealed, with their permits suspended until the operator chooses to continue development, or plugs the wells and reclaims the well pad.

For the record, DOGAMI has not conducted a feasibility study of potential use of hydraulic fracturing within the State. However, the US Geological Survey recently published an assessment of coalbed methane gas potential that covers Oregon. I have provided a map, created with the USGS data that shows areas where coalbed methane gas reserves potentially exist; and where hydraulic fracturing may be required to develop those resources.

For drilling operations that propose hydraulic fracturing, DOGAMI, the Department of Environmental Quality, and other natural resource agencies work together to ensure that resources are being developed in compliance with state law and that each agency's regulatory responsibilities are met. I have provided a fact sheet that outlines regulation and permitting.

Thank you again for the opportunity to address this committee. I would be happy to answer any questions you may have.

DOGAMI Fact Sheet: Hydraulic Fracturing in Oregon

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Oregon's Department of Geology and Mineral Industries, Department of Environmental Quality, and Water Resources Department regulate and issue permits for the drilling and operation of oil or gas wells, including wells drilled using hydraulic fracturing technology, commonly known as fracking.

What is Hydraulic Fracturing?

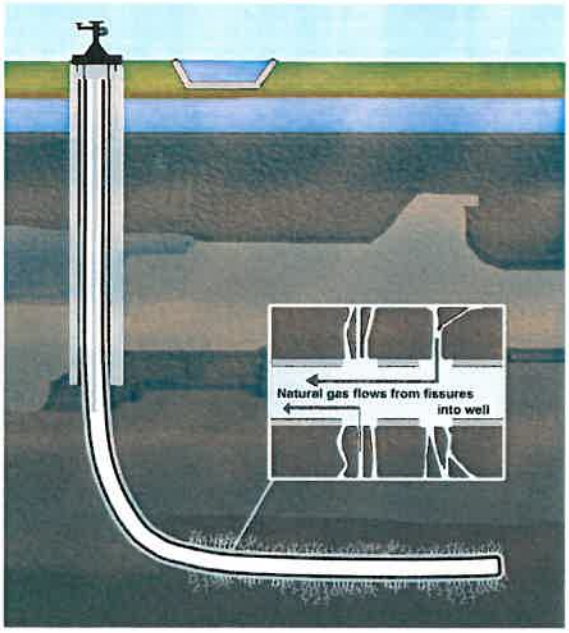

Image modified from US EPA

Hydraulic fracturing typically involves injecting water, sand, and chemicals under high pressure into a bedrock formation via a well. This process creates new fractures in the rock and increases the size and connectivity of existing fractures. Many rock formations have low permeability, which means that the gas, oil or hot water they contain will not flow economically through the rock into the well. The hydraulic fracturing technique is commonly used to increase the permeability of a rock formation, and increase flow into a well. In recent years, technological advances in horizontal drilling and hydraulic fracturing have resulted in dramatically increased oil and gas production in many parts of the US.

Regulating & Permitting of Hydraulic Fracturing

For drilling operations that propose hydraulic fracturing, DOGAMI, DEQ, and other natural resource agencies work together to ensure that resources are being developed in compliance with state law, that each agency's regulatory responsibilities are met, and that the environment is protected.

DOGAMI Regulatory Authority

- Down-hole activities
- The well pad
- Off-site impacts

DEQ Regulatory Authority

- EPA-delegated authority to regulate compliance with the Safe Drinking Water Act and Clean Water Act
- Reviews proposed fracturing fluid composition
- Regulates waste disposal of fracturing fluids
- May require an Underground Injection Control (UIC) Permit prior to injection of fluids

Once an application for a permit to drill an oil or gas well is received, the application is circulated to other natural resource agencies for comment. DOGAMI then issues a permit with conditions designed to address and mitigate concerns identified by other agencies. Depending on the proposed drilling process or site-specific issues, additional information may be required from the applicant.

The Energy Policy Act passed by Congress in 2005 amended the Safe Drinking Water Act to exclude hydraulic fracturing fluids (except diesel fuel) related to energy production from regulation under the UIC program. However, as allowed under federal UIC rules, DEQ's UIC program regulates injection of all types of hydraulic fracturing fluids.

Agency Coordination & Collaboration Efforts

In 2003, DOGAMI formed a coalbed methane coalition to strengthen and streamline agency permitting collaboration on gas wells drilled in Coos County. Each Agency provided technical and regulatory staff to develop a clear outline of the permitting process. Future drilling applications that might include hydraulic fracturing and involve multiple agencies' regulatory authority will follow a similar permit streamlining process.

FACT SHEET

Setting the Record Straight: Water and Hydraulic Fracturing in California

Despite repeated claims that hydraulic fracturing in California uses "millions of gallons of water per well," the amount of water used here is quite small when compared to other uses for water. How small?

According to 568 well reports filed with the FracFocus public website, the average amount of water used for hydraulic fracturing in California in 2012 was 116,535 gallons per well. That's less than half the amount of water needed to irrigate a golf course for a single day.

The total amount of water used in the 568 hydraulic fracturing operations reported in 2012 was slightly less than 66 million gallons – or 202 acre feet. On average, agriculture utilizes 34 million acre feet of water annually[4] and cities/towns consume slightly less than 10 million acre feet annually[5].

There is a large variation in the amount of water used for hydraulic fracturing, according to the FracFocus reports. The smallest amount of water used was 6,645 gallons. The largest amount was 1.5 million gallons. Only two hydraulic fracturing operations reported on FracFocus in California in 2012 used more than 1 million gallons.

According to FracFocus data, 97 percent of the hydraulic fracturing that was reported for California took place in Kern County.

The Facts about Water

116,535 gallons:	The average amount of water used to hydraulically fracture an oil well in California in 2012
146,000 gallons:	The average amount of water used by a four-person family living for one year.[1]
312,000 gallons:	The amount of water needed to irrigate a golf course in a single day
202 acre feet:	The total amount of water used in California for hydraulic fracturing in California in 2012
400,000 acre feet:	The total amount of water used for municipal purposes in Kern County in 2011[2]
2.7 million acre feet:	The total amount of water used for growing food and fiber in Kern County in 2011[2]
121.8 billion gallons:	The amount of water produced along with oil and natural gas in California in 2011[3]
34 million acre feet:	The total amount of water used for agriculture

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