Kansas Independent Oil & Gas Association
800 SW Jackson Street - Suite 1400
Topeka, Kansas 66612-1216
785-232-7772 FAX 785-232-0917
Email: kiogaed@gmail.com

Testimony to House Energy & Utilities Committee

Hydraulic Fracturing
Regulatory & Policy Considerations

Edward P. Cross, President
Kansas Independent Oil & Gas Association

January 31, 2012

Good morning Chairman Holmes, Vice Chairman Knox and members of the committee. I am Edward Cross, President of the Kansas Independent Oil & Gas Association (KIOGA). KIOGA represents the interests of independent oil and natural gas producers in Kansas. With over 1,400 members across the entire state, KIOGA is the lead state and national advocate for Kansas independent oil and natural gas producers. Our members account for 86% of the oil and 63% of the natural gas produced in Kansas. I am responsible for public policy advocacy and interaction with external stakeholders including elected officials, regulators, governmental decision-makers, and community thought leaders. I am here this morning to summarize issues and challenges surrounding hydraulic fracturing (HF).

America is truly in the midst of a revolution in oil and natural gas, which is the nation's fastest-growing manufacturing sector. New and evolving technologies like 3D seismic, horizontal drilling, and hydraulic fracturing have allowed oil and gas companies to access reserves of previously-unrecoverable oil and natural gas. According to the U.S. Energy Information Administration, these advances mean there is at least six times as much recoverable

natural gas today as there was a decade ago and our nation's crude oil imports have now dropped below 50%. Unconventional resource plays like the Mississippian Lime Play in Kansas and Oklahoma along with about 20 new onshore oil fields could collectively increase the nation's oil output by 25% within a decade. But the oil from these tightly-packed rocks can be extracted only by using hydraulic fracturing.

For more than 60 years, America's energy producers have relied on an innovative technique known as hydraulic fracturing (HF) to enhance the production of oil and natural gas. While the first commercial "frac job" - as it is referred to within the industry - was conducted in 1947, the technique quickly became the most commonly used method of stimulating oil and natural gas wells. The technology has been deployed more than 1.2 million times over the course of more than 60 years.

Some environmental groups as well as some policymakers have been campaigning to move HF oversight from states to federal jurisdiction. Because oil and natural gas have a significant role to play in terms of our nation's energy security, I will discuss how states regulate HF clarifying some misperceptions about the oil and natural gas industry, and review federal HF policy considerations.

What is Hydraulic Fracturing

HF is a proven technology to increase the recovery of crude oil and natural gas from underground formations. Developed in the late 1940s, HF is a process consisting of pumping a mixture of water and sand at high pressure into isolated zones to enhance the natural fractures that exist in the formation. During the process, long, narrow cracks are created to serve as a flow channel for oil and natural gas trapped in the formation. Proppants (usually sand) in the fluid keep the fractures open to create a pathway for oil and natural gas to migrate to the well bore. HF treatments are designed to specific conditions of the target formation (thickness, rock fracture characteristics, reservoir geochemistry, etc.) to optimize the development of a network of fractures. Their design is based on an understanding of the in-situ conditions present in the reservoir.

Why is HF necessary?

HF is essential for recovering crude oil and natural gas resources from formations that would be unavailable through other completion practices. Without HF, existing wells would deplete very quickly or would have never been commercially productive. HF is applied to the majority of America's oil and natural gas wells to enhance well performance, minimize drilling, and recover otherwise inaccessible resources. In fact, a vast majority of the wells in operation today have been fractured, and the process continues to be applied in new and innovative ways to boost production of American energy in unconventional formations, such as "tight" gas sands, shale deposits and coalbeds. As a result, HF is now responsible for 30% of our domestic oil and natural gas, and has aided in the extraction of more than 600 trillion cubic feet of natural gas and 7 billion barrels of oil. According to the National Petroleum Council, 60% to 80% of all wells drilled in the U.S. in the next decade will require fracturing to remain viable.

What's in fracturing fluid?

According to the U.S. Department of Energy (DOE) and Ground Water Protection Council (GWPC), HF fluids consist of 99.5% water and sand. In addition, there are small amounts of other compounds, each of which play a critical role in the process. The vast majority of these materials can be found in the food we eat, beverages we drink, and household cleaning items we keep under the sink. State regulators are made aware of those chemicals, and have access to all information they need regarding their safe use.

Does HF pose a risk to public health?

The United States Environmental Protection Agency (EPA) released a report in 2004 concluding that the technology poses "no threat" to underground drinking water. Clinton Administration EPA chief Carol Browner testified in 1999, finding "no evidence that . . . hydraulic fracturing . . . has resulted in any contamination or endangerment of underground sources of drinking water." On May 25, 2011 EPA Administrator Lisa Jackson stated, under

oath, "I'm not aware of any proven case where the fracking process itself has affected water, although there are investigations ongoing." Other studies conducted over the years have reinforced these conclusions. Among them are the GWPC *Inventory and Extent of Hydraulic Fracturing in Coalbed Methane Wells in the Producing States* (1998); Interstate Oil & Gas Compact Commission *States' Experience with Hydraulic Fracturing* (2002).

Fact-Checking Some Common Environmental Assertions - Environmentalists often make assertions about the impact of HF to public health. Many times the statements are out of context and need additional information to help promote a more complete and informed discussion. Here are a few common assertions:

Assertion: *"Chemicals used in fracturing are a threat to groundwater and streams."*
Facts: U.S. Environmental Protection Agency Administrator Lisa Jackson testified before Congress in May 2011 stating "I am not aware of any proven case where the fracking process itself affected water." U.S. Department of Interior Bureau of Land Management Director Robert Abbey testified before Congress in June 2011 stating "We have not seen any impacts to groundwater as a result of hydraulic fracturing."

Assertion: *"The EPA is investigating whether drilling poses any threats to drinking water."*
Facts: In 2004, EPA released the findings of a five-year investigation into whether the application of fracturing technology in coalbed methane (CBM) formations – which reside thousands of feet closer to water aquifers than other conventional and unconventional formations – had any negative impacts on ground water. The EPA concluded that "Although thousands of CBM wells are fractured annually, EPA did not find confirmed evidence that drinking water wells have been contaminated by hydraulic fracturing fluid injection into CBM wells."

Assertion: *"There are thousands of cases linking HF to ground water contamination"*
Facts: HF technology has been deployed more than 1.2 million times over a course of 60 years without a single verified or documented instance of harm to groundwater. Environmentalists often refer to a number of cases. Environmental groups have been intensely reviewing past HF records trying to find a case where HF contaminated ground water. Last August, they thought they found a case in West Virginia from nearly 30 years ago. However, upon further review it

was found that state regulators at the time believed HF had nothing to do with the water well contamination. When the best these groups' can come up with is a disputed case from 30 years ago, the real story here is HF record of safety. More recently is the Pavillion, Wyoming and Dimock, Pennsylvania cases. On December 8, 2011, the EPA said they might have detected groundwater pollution resulting from HF in Pavillion, Wyoming. However, scientists have found the EPA study flawed and its assumptions without the support of sound science. For example, the EPA's monitoring wells were drilled into gas bearing zones so the fact that gas was detected is not surprising. In addition, the results between the EPA's domestic water wells and the EPA's deep monitoring wells were confused. The compound found in the drinking water wells and the compound found in the deep wells is different and would not combine under the conditions found in Pavillion as suggested by the EPA. In addition, inconsistency in lab detection suggests sample contamination. In the Dimock, Pennsylvania case, the EPA tried to link water contamination to drilling activity. On December 2, 2011, the EPA declared that data did not indicate well water presents an immediate health threat. On January 19, 2012, despite having no new data, EPA reversed its position. The EPA said the water wells of the four residents have elevated levels of two things the EPA itself doesn't consider hazardous to health and elevated levels of something of which the U.S. Geological Survey has "overwhelming evidence" is natural in origin. Not from drilling a well. So, the EPA is spending hundreds of thousands of taxpayer dollars supplying water to people who don't need it. The EPA's credibility is open for review. Ten U.S. Senators, including Kansas Senator Pat Roberts, have asked the EPA to subject their Wyoming report to a more rigorous level of scientific review than is currently planned. Under Lisa Jackson, the EPA has played an increasingly politicized role in regulatory enforcement. Demonstrating the validity of these cases in the face of 60 years of safe HF without any evidence of contamination is a burden EPA Administrator Lisa Jackson must now bear.

Assertion: *"Studies from Duke University and Cornell University link hydraulic fracturing to ground water contamination and demonstrate that HF contributes to global warming more intensely than CO2 emissions."*

Facts: Duke University released a study in May 2011 that many thought linked methane migration to HF. However, the study in fact said that HF was not responsible for methane

migration into water wells, additionally stating that neither brine nor fracturing fluids were detected in any of the water wells they sampled, even in areas where development operations were most active. Politics obviously played a central role in guiding the direction of the paper as reflected in the comments from the paper's authors when they told the *Philadelphia Enquirer* "We would like to see shale gas become largely unnecessary, along with coal and oil. The faster we develop and adopt renewable energy technologies, the less we will have to worry about whether it's safe for people to drink their water." Cornell University researcher-activists released a study in early 2011 that attempted to argue that HF releases substantial amounts of methane that is a 70 times more potent global warming gas than CO2. Since then, the study has received intense peer criticism. At least 11 university and research groups have questioned the Cornell study including other Cornell University professors who said the study was seriously flawed. The peer criticism can best be summed up by a University of Maryland study that concluded the Cornell study was "largely unjustified".

Assertion: *"Hydraulic fracturing causes earthquakes"*

Facts: Although the world's strongest earthquakes occur along the major fault lines, there are smaller faults all over. Oil and gas production is often found in areas that are geologically highly folded and faulted thrust systems with a long history of seismic activity due to numerous natural faults. Given the seismic recording history, it is difficult to determine whether the character of an earthquake in an oil and gas producing area is uniquely different from that of earthquakes observed in the area previous to oil and gas activity. Simply because an earthquake fits a pore pressure diffusion model does not indicate that this is the physical process that caused the earthquake. Because of a number of variables and uncertainties, it is impossible to determine with a high degree of certainty whether an earthquake was induced by HF.

Is HF regulated?

HF has been effectively regulated by state governments and oversight agencies since its inception. At both the federal and state level, all of the laws, regulations, and permits that apply to oil and natural gas exploration and production activities also apply to HF. These include all laws and regulations related to well design, location, spacing, operation, and abandonment as

well as environmental activities and discharges, including water management and disposal, waste management and disposal, air emissions, underground injection, surface disturbance, and worker health and safety. The process of HF is subject to a rigorous and well established process, developed in accordance to the geology, hydrology, climate, topography, industry characteristics, development history, state legal structures, population density, and local economics unique to each state. The GWPC, considered one of the nation's leading groundwater protection organizations, released a report in 2009 underscoring this record of safety and performance on the state level finding the "current state regulation of oil and gas activities is environmentally proactive and preventive." GWPC additionally found that the "regulation of oil and gas field activities is managed best at the state level where regional and local conditions are understood and where regulations can be tailored to fit the needs of the local government."

Well operators not only work with state regulators, but also comply with numerous federal requirements. The Occupational Safety and Health Administration, the Environmental Response Compensation and Liability Act and the Toxic Substances Control Act all contain record keeping and reporting rules followed by energy producers. These regulations ensure all chemicals used in the extraction process are properly handled and stored, and that workers and first responders are made aware of the substances they handle.

How is the risk of ground water contamination further reduced?

In Kansas, underground aquifers containing potable water typically reside from 50 to 1,000 feet below the surface while HF operations typically occur between 2,000 and 6,000 feet below the surface. In addition to state requirements, the GWPC notes in its report that the potential risk of endangerment to ground water is further reduced by physical factors such as the vertical distance between the fractured zone and ground water; presence of other zones between the fractured zone and the deepest ground water zone that may readily accept fluid; and the presence of vertically impermeable formations between the fractured zone and the deepest ground water zone, which act as geological barriers to fluid migration. HF technology has been deployed more than 1.2 million times over a course of 60 years without a single verified or documented instance of harm to groundwater.

The GWPC and the Interstate Oil & Gas Compact Commission (IOGCC) developed a web-based database (www.FracFocus.org) that allows companies to voluntarily disclose chemical constituents in frac fluids. FracFocus can be a significant factor in refuting the arguments that a federal reporting program is needed and KIOGA encourages Kansas operators to register and submit information on HF operations to the FracFocus website. Indeed, state oil and gas associations nationwide are encouraging operators to submit information on HF operations to the FracFocus website. As of January 19, 2012, the website reported 10,161 HF operations nationwide were reported and the number is growing rapidly.

Hydraulic Fracturing Water Usage

Water and sand make up more than 99.5% of the fluid used to hydraulically fracture a well. Water acts as the primary carrier fluid in HF. Because HF can use hundreds of thousands to millions of gallons of water, it is critical that large quantities of relatively fresh water be reasonably available. In Kansas, a typical HF operation on a vertical well may use anywhere from 10,000 gallons to 100,000 gallons. Horizontal wells may use as much as 1 million gallons or more. The quality of water is very important because impurities can reduce the efficiency of the additives used in the process. Most water used in HF comes from surface water sources such as lakes, rivers, and municipal supplies. The amount of water used in HF may appear substantial, but it is small when compared to other water uses such as agriculture, manufacturing, and municipal water supply. All oil and gas operations, of which HF is a part, comprise less than 1% of the total water used in the U.S.

Economic Impact of Hydraulic Fracturing

HF is helping our nation become more energy independent. Oil imports are now below 50% and we measure natural gas reserves in centuries. Without HF, studies by IHS Global Insight indicate 50% of America's oil wells and 33% of America's natural gas wells would be closed. Domestic oil production would be slashed by 183,000 barrels per day and domestic natural gas production would be slashed by 245 billion cubic feet per day. By 2014, our nation's real GDP would be lowered by $374 billion and employment would fall by 2.9 million jobs, including 5,000-7,000 Kansas jobs.

Policy Considerations

Environmental activists continue to generate unreasonable anxiety around the country over chemicals used in the hydraulic fracturing process. Despite a clear and compelling history that state regulation of the environmental risks of HF protects drinking water supplies, environmental group's unyielding accusations create demands for more information on chemicals. Potential federal legislation described as the "FRAC Act" would put the EPA in the position to initiate a federal reporting requirement for every state permitted well. Responding to the concerns and politics, the Ground Water Protection Council (GWPC) and Interstate Oil & Gas Compact Commission (IOGCC) developed the FracFocus website. The Kansas Independent Oil & Gas Association (KIOGA) supports FracFocus and believes it can be a significant factor in refuting the arguments that a federal reporting program is needed. KIOGA strongly encourages all producers that hydraulically fracture wells to register and submit their information. KIOGA arranged a webinar last September when a number of Kansas producers learned more about the program and how to submit information.

The IOGCC is also developing a website that allows viewers to collect state-specific oil and gas regulations associated with HF. The developing website will allow the user the ability to cross-reference state statutes and rules that regulate HF and generate a PDF report. The E-Reference website along with FracFocus will provide more transparency in the disclosure of frac fluid components.

The IOGCC established a state review process in the 1990's and management of the process was shifted to a non-profit corporation known as the State Review of Oil & Natural Gas Environmental Regulations (STRONGER). Since 1999, STRONGER has been active in reviewing state regulations on oil and natural gas and reporting on the progress of state regulation. STRONGER has reviewed 22 state regulatory programs, including Kansas, accounting for over 90% of the national oil and natural gas production. STRONGER recently unveiled HF guidelines for state regulatory programs. The guidelines are not prescriptive regulatory standards, but an outline of key elements for effective state HF regulation. Pennsylvania, Ohio, Louisiana, Arkansas, and Oklahoma have recently had a STRONGER review of their HF regulations.

Several environmental groups sent a letter to President Obama on August 8th urging him to use "any legal means" to stop HF nationwide until a complete study of the impacts of HF was completed. The letter suggested two actions. First action suggested by these environmental groups was to place a moratorium on HF until studies were completed and adequate laws were enacted and the "exemption of hydraulic fracturing from the Safe Drinking Water Act" was removed. Second, they urged a dialogue about the role of natural gas for the nation's energy future, calling natural gas the "bridge (fuel) to nowhere." KIOGA joined 117 other oil and gas groups and other concerned citizens in a September 20, 2011 letter exposing the flawed assertions made by the environmental groups and emphasizing the lack of factual information in the environmental group letter. We also included the results of an IHS study showing that placing a national moratorium on HF would result in 2.9 million jobs lost.

KIOGA remains fully engaged in federal and state advocacy on HF concerns. I have visited over 130 congressional members over the past 3 years. I explain how the states have regulated HF effectively for decades and express that industry is not opposed to disclosure and are willing to work for transparency, but adamantly oppose to U.S. Environmental Protection Agency (EPA) involvement. KIOGA urges that any congressional action keep regulation of HF with the states and away from EPA due to the EPA's propensity to base decisions on political motivations instead of sound science. KIOGA's efforts were key in helping stave off attempts in early 2011 to amend the Safe Drinking Water Act (SDWA) to empower the EPA with authority to pre-empt states in regulating HF under the SDWA.

Conclusion

Environmental activists continue to generate unreasonable anxiety around the country over chemicals used in the HF process. Despite a clear and compelling history of effective state regulation, the environmental group's unyielding accusations create demands for more information on chemicals. Some environmental groups have been campaigning for years to move HF oversight from states to federal jurisdiction, where it could be subject to a host of new regulatory burdens that could discourage exploration, slow production, reduce oil and natural gas

supplies, raise energy costs, and erode high-paying jobs. These environmental groups propose to subject all HF of oil and natural gas wells to the requirements of the federal underground injection control (UIC) program under SDWA, despite language excluding this in the Energy Policy Act of 2005. Despite its longstanding record of safety and widespread utilization in the United States, many of the hard facts about HF are not widely known, or have been misrepresented in the public light. For decades, HF oversight has remained with states, which continue to compile a remarkable record of oversight and enforcement. The EPA confirmed as much to the U.S. Senate in 2010 when they said there existed no evidence that states aren't doing a good job already when it comes to regulating HF activities. Also, on February 15, 2010, Steve Heare Director of EPA's Drinking Water Protection Division said that state regulators were doing a good job overseeing HF and there was no evidence the process causes water contamination.

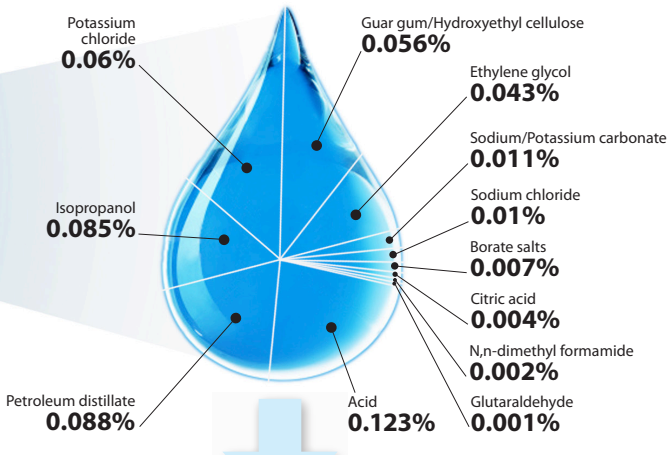
An extensive regulatory apparatus at all levels of government, including federal level, is in place to ensure HF continues to be well regulated. Because they understand the regional and local conditions and have every motivation to protect the environment in which they and their families live, state regulators are in the best position to protect groundwater and drinking water sources. Industry also has strong incentives to maintain a high level of environmental performance, and it has worked hard to review and improve its operations and communication with the public. With a growing number of STRONGER reviews of state HF regulations along with the development of FracFocus, E-Reference, and communication efforts underway across the nation, environmental groups are seeing their ability to scare the public erode. Environmental groups attempts to criticize the state regulatory process is illustrative of the shallow and wholly flawed approach they use to link unrelated incidents in an innuendo filled collection of unfounded allegations.

I appreciate the opportunity to provide these comments. HF is of critical importance to our national energy security and economic recovery. HF technology today is better than it's ever been and regulations are broader and more stringent. HF is a proven technology that industry has demonstrated time and gain can be used safely. Thank you for your time and consideration. I stand for questions.

A FLUID SITUATION:

TYPICAL SOLUTION* USED IN HYDRAULIC FRACTURING

0.49%
ADDITIVES*



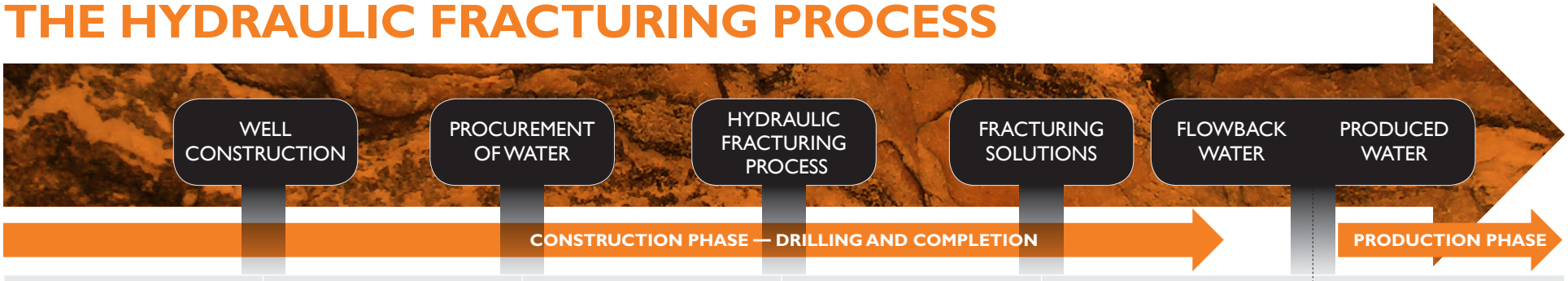
On average, **99.5%** of fracturing fluids are comprised of freshwater and compounds are injected into deep shale gas formations and are typically confined by many thousands of feet or rock layers.

Source: DOE, GWPC: Modern Gas Shale Development In the United States: A Primer (2009)

Compound*	Purpose	Common application
Acids	Helps dissolve minerals and initiate fissure in rock (pre-fracture)	Swimming pool cleaner
Glutaraldehyde	Eliminates bacteria in the water	Disinfectant; Sterilizer for medical and dental equipment
Sodium Chloride	Allows a delayed break down of the gel polymer chains	Table Salt
N, n-Dimethyl formamide	Prevents the corrosion of the pipe	Used in pharmaceuticals, acrylic fibers and plastics
Borate salts	Maintains fluid viscosity as temperature increases	Used in laundry detergents, hand soaps and cosmetics
Polyacrylamide	Minimizes friction between fluid and pipe	Water treatment, soil conditioner
Petroleum distillates	"Slicks" the water to minimize friction	Make-up remover, laxatives, and candy
Guar gum	Thickens the water to suspend the sand	Thickener used in cosmetics, baked goods, ice cream, tooth-paste, sauces, and salad dressing
Citric Acid	Prevents precipitation of metal oxides	Food additive; food and beverages; lemon juice
Potassium chloride	Creates a brine carrier fluid	Low sodium table salt substitute
Ammonium bisulfite	Removes oxygen from the water to protect the pipe from corrosion	Cosmetics, food and beverage processing, water treatment
Sodium or potassium carbonate	Maintains the effectiveness of other components, such as crosslinkers	Washing soda, detergents, soap, water softener, glass and ceramics
Proppant	Allows the fissures to remain open so the gas can escape	Drinking water filtration, play sand
Ethylene glycol	Prevents scale deposits in the pipe	Automotive antifreeze, household cleansers, deicing, and caulk
Isopropanol	Used to increase the viscosity of the fracture fluid	Glass cleaner, antiperspirant, and hair color

*The specific compounds used in a given fracturing operation will vary depending on source water quality and site, and specific characteristics of the target formation. The compounds listed above are representative of the major material components used in the hydraulic fracturing of natural gas shales. Compositions are approximate.

FEDERAL STATUTES REGULATE EVERY STEP OF THE HYDRAULIC FRACTURING PROCESS



CWA
- Water Resource Protection
- Inspection and Enforcement Authority

OSHA
- Worker Safety and Operations
- Inspection and Enforcement Authority

CWA
- Water Resource Protection
- Inspection and Enforcement Authority

OSHA
- Worker Safety and Operations
- Inspection and Enforcement Authority

OSHA
- Worker Safety and Operations
- Chemical Disclosure
- Inspection and Enforcement Authority

SUPERFUND
- Spill Reporting
- Clean Up
- Inspection and Enforcement Authority

EPRCA
- Hazardous Substance Reporting
- Inspection and Enforcement Authority

CWA
- Spill Prevention Control and Countermeasures
- Management Requirements
- Inspection and Enforcement Authority

CWA
- Water Resource Protection and Discharge Requirements
- Reporting
- Inspection and Enforcement Authority

SDWA
- Water Injection Requirements
- Inspection and Enforcement Authority

CWA: Clean Water Act • OSHA: Occupational Safety and Health Administration • SDWA: Safe Drinking Water Act • EPRCA: Community "Right to Know" Act

ENERGYINDEPTH

A LOOK BACK: HF, SDWA, AND RECENT EFFORTS BY STATES TO FIGHT BACK

1948 — Hydraulic fracturing first commercially employed.

1974 — Safe Drinking Water Act (SDWA) enacted.

- Aims to protect public water supplies and establishes new standards and regulations to protect underground sources of drinking water (USDW).
- Despite having been commercially utilized for nearly 25 years up to this point, hydraulic fracturing never considered for regulation under SDWA.

1980 — SDWA amended, creates the authority for states to be granted primacy for regulating Class II injection wells, assuming they can show equivalent environmental protections in place; also clarifies that natural gas storage is not underground injection.

1986 — SDWA amended to regulate over 100 specific drinking water contaminants; hydraulic fracturing, in practice at this point for nearly 40 years, never considered for SDWA regulation.

1996 — 1996 SDWA amended to emphasize sound science and risk-based standard setting; no suggestion that hydraulic fracturing be regulated under SDWA.

1997 — Legal Environmental Assistance Foundation (LEAF) v EPA - arguing that fracturing of coalbed methane in Alabama should be regulated under SDWA, without considering any legislative history or environmental impacts.

2000 — LEAF challenges EPA's decision to allow Alabama to regulate hydraulic fracturing under its Class II well program. EPA initiates its own study of hydraulic fracturing.

2002 — EPA releases draft of hydraulic fracturing study, concludes the technology does not pose a risk to drinking water.

2003 — Major service companies sign memorandum of agreement with EPA, declare the use of diesel fuel off-limits in the fracturing of coalbed methane wells near USDWs.

2004 — EPA releases its final report on the use of hydraulic fracturing in coalbed methane operations; reasserts that hydraulic fracturing poses "no threat" to drinking water.

2005 — 2005 House passes bipartisan energy bill that, among other things, clarifies that Congress never intended hydraulic fracturing to be regulated under SDWA.

2007 — Explosion occurs at home in Bainbridge, Ohio; incident blamed on hydraulic fracturing, which is rejected and corrected in subsequent investigations.

2008 — Outside interest groups expand efforts to attack hydraulic fracturing in mid-Atlantic United States (Marcellus Shale).

- HR 7271 (DeGette, Hinchey, Salazar) introduced in the House seeking to strip clarifying language in 2005 energy bill. Interest groups push for restrictions on hydraulic fracturing to be added to state regulations in New Mexico and county ordinances in Colorado and New Mexico.

2009 — States remind Congress that regulation and risk management at the state level is, and always has been, the most effective approach.

- Alabama asks Congress to preserve state primacy to regulate hydraulic fracturing
- Louisiana urges Congress to "take such actions as necessary" to preserve hydraulic fracturing
- Oklahoma passes concurrent resolution urging Congress not to pass legislation that imposes federal regulation over hydraulic fracturing
- Pennsylvania introduces resolution supporting continued state regulation of hydraulic fracturing
- Texas urges Congress to "maintain state regulatory coverage" of hydraulic fracturing
- Rep. DeGette again introduces legislation targeting hydraulic fracturing; Sens. Casey (PA) and Schumer (NY) introduce companion bill in the Senate.
- GWPC analysis finds state regulations associated with hydraulic fracturing protect drinking water

GASLAND DEBUNKED

WRONG ON THE LAW

***GasLand* myth:**
"What I didn't know was that the 2005 energy bill pushed through Congress by Dick Cheney exempts the oil and natural gas industries from the Clean Water Act, the Clean Air Act, the Safe Drinking Water Act...and about a dozen other environmental regulations." (6:05)

Actual truth:

- ✓ The oil and natural gas industry is regulated **under every single one of these federal laws** — under provisions of each that are relevant to its operations.
- ✓ The 2005 energy bill was supported by nearly three-quarters of the U.S. Senate, including then-Sen. Barack Obama of Illinois. In the U.S. House, 75 Democrats joined 200 Republicans in supporting the final bill.

WRONG ON THE PROCESS

***GasLand* myth:**
"The fracking itself is like a mini-earthquake. ... In order to frack, you need some fracking fluid — a mix of over 596 chemicals." (6:50)

Actual truth:

- ✓ The fracturing process uses a mixture of fluids comprised almost entirely (99.5%) of water and sand. The remaining materials, used to help deliver the water down the wellbore, are typically found and used around the house. The average fracturing operation utilizes fewer than 12 of these components, according to the Ground Water Protection Council — not 596.
- ✓ Over the course of its history, fracturing has not only been used to increase the flow of oil and natural gas from existing wells, but also to access things like water and geothermal energy. It's even been used by EPA to clean up Superfund sites.

WRONG ON DISCLOSURE

***GasLand* myth:**
"Fracking chemicals are considered proprietary." (1:00:56)

Actual truth:

- ✓ The **entire universe of additives used in the fracturing process** is known to the public and the state agencies that represent them.
- ✓ Not only do individual states mandate disclosure, the federal government does as well. The Occupational Safety and Health Administration (OSHA) mandates this information be kept at every wellsite, and made readily available to response and medical personnel in case of an emergency.

WRONG ON FLAMMABLE FAUCETS

***GasLand* myth:**
Methane in the water in Fort Lupton, Colo. said to be the result of natural gas development.

Actual truth:

- ✓ Colorado debunks the claim: "Dissolved methane in well water **appears to be biogenic [naturally occurring] in origin**. ...There are no indications of oil & gas related impacts to water well." (COGCC, 9/30/08)

ENERGYINDEPTH

WRONG ON DUNKARD CREEK

***GasLand* myth:**
Deceased fish along a 35-mile stretch of creek in western Pennsylvania attributed to natural gas development.

Actual truth:

- ✓ EPA debunks the claim: "The situation in Dunkard Creek **should be considered a chronic exposure** since chloride levels were elevated above the criteria for long periods of time." (EPA, 11/23/09)
- ✓ Local media cite "glaring error": "One glaring error in the film is the suggestion that gas drilling led to the September fish kill at Dunkard Creek in Greene County. That was determined to have been caused by a golden algae bloom from mine drainage from a [mine] discharge." (*Washington [Pa.] Observer-Reporter*, 6/5/10)

WRONG ON WEST DIVIDE CREEK

***GasLand* myth:**
Methane in West Divide Creek, Colo. blamed on natural gas development.

Actual truth:

- ✓ Colorado debunks it (again): "Stable isotopes from 2007 consistent with 2004 samples indicting gas bubbling in surface water features is of **biogenic origin**." (COGCC, July 2009)
- ✓ Follow-up email: "Lisa: As you know since 2004, the COGCC staff has responded to your concerns about potential gas seepage along West Divide Creek on your property and to date **we have not found any indication that the seepage you have observed is related to oil and gas activity.**" (email from COGCC to Bracken, 06/30/08)

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Drilling for Natural Gas in the Marcellus Shale Formation
Frequently Asked Questions

Can drilling companies keep the names of chemicals used at drilling sites a secret?

No. Drilling companies must disclose the names of all chemicals to be stored and used at a drilling site ... as part of the permit application process. These plans contain copies of material safety data sheets **for all chemicals** ... This information is on file with DEP and is available to landowners, local governments and emergency responders.

Source: Marcellus FAQ fact sheet, PA DEP; accessed on 4/20/10

STATE REGULATORS: IN THEIR OWN WORDS

PENNSYLVANIA: "There has never been any evidence of fracking ever causing direct contamination of fresh groundwater in Pennsylvania or anywhere else." (PA DEP's Scott Perry, *Scranton Times-Tribune*, 4/2/10)

NEW YORK: "I think is clear that when put into the proper context and perspective, the reported information shows that the incidence of spills and other pollution events at modern naturlal gas well sites is exceedingly low …" (Alexander B. "Pete" Grannis, commissioner of NY DEC, 12/30/09)

TEXAS: "Though hydraulic fracturing has been used for over 50 years in Texas, our records do not indicate a single documented contamination case associated with hydraulic fracturing." (Texas Railroad Commission's Victor Carrillo, 5/29/2009)

OHIO: "After 25 years of investigating citizen complaints of contamination, [our] geologists have not documented a single incident involving contamination of ground water attributed to hydraulic fracturing." (Scott Kell, deputy chief of Ohio DNR, 5/27/09)

NEW MEXICO: "[W]e have found no example of contamination of usable water where the cause was claimed to be hydraulic fracturing." (Mark Fesmire, director of NM Oil Conservation Division, 5/29/09)

ALABAMA: "I can state with authority that there have been no documented cases of drinking water contamination caused by such hydraulic fracturing operations in our state." (Barry H. "Nick" Tew, Jr., Oil & Gas supervisor for Alabama, 5/27/09)