Kevin McCotter
Vice President – Corporate Development

February 1, 2012

The Honorable Carl Holmes
Chairman – House Energy and Utilities Committee
Room 174-W
Kansas State Capitol
300 SW 10th Street
Topeka, Kansas 66612

Written Testimony Only In Favor Of HB 2526

Dear Chairman Holmes and Members of the House Energy and Utilities Committee:

Thank you for the opportunity to confer on House Bill 2526, related to the regulation of hydraulic fracturing processes used in oil and gas development. My name is Kevin McCotter with Chesapeake Energy Corporation. We are currently active in the state of Kansas and have a Field Office in Garden City. We stand before the Committee today in support of House Bill 2526 and offer the following comments.

Chesapeake Energy Corporation supports House Bill 2526 which provides the ability for the Kansas Corporation Commission to promulgate rules and regulations necessary for the disclosure of additives used in the hydraulic fracturing process. We believe providing further information about our drilling, completions and producing operations in today's environment is more critical than ever. In April, 2011, Chesapeake was one of the first energy companies to call for disclosure on a well-by-well basis and announced that we would begin actively participating in a national publicly accessible web-based registry, www.fracfocus.org, developed by the Ground Water Protection Council (GWPC) and the Interstate Oil and Gas Compact Commission (IOGCC) with the support of the U.S. Department of Energy (DOE.)

In September, 2011, Chesapeake published a Hydraulic Fracturing Fact sheet (attached) which is also a part of our written testimony submitted today. Our Hydraulic Fracturing Fact Sheet is available on our website, CHK.com, and it has been used to educate our many stakeholders on facts, regulations and safety practices that are in place as natural gas and oil producers safely recover natural gas and oil from deep formations. As part of these practices, we disclose the additives used in each and every hydraulic fracturing procedure as required by the individual states and on Frac Focus.

Since its inception, Chesapeake has committed to promoting and conducting responsible exploration and production activities in its operating areas and achieving a standard of environmental excellence. We are pleased to offer our support for HB 2526 and commend Chairman Holmes and the members of the Committee for addressing this issue.

Sincerely,

Attachment

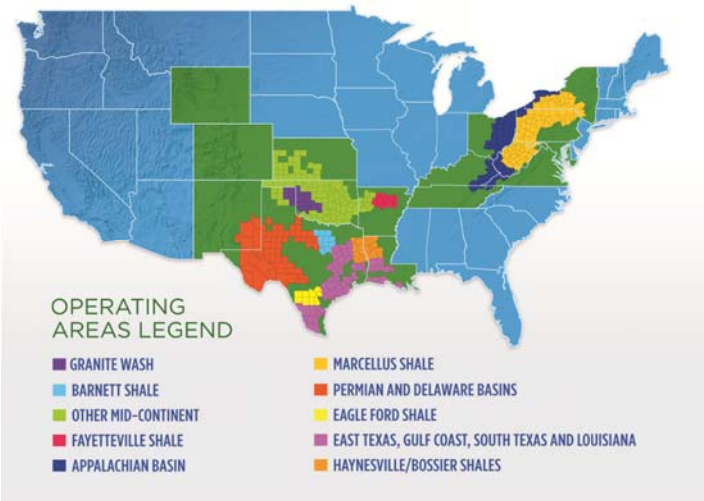
HYDRAULIC FRACTURING

FACT SHEET SEPTEMBER 2011

Hydraulic fracturing, commonly referred to as fracking, is a proven technological advancement which allows natural gas and oil producers to safely recover natural gas and oil from deep shale formations. This discovery has the potential to not only dramatically reduce our reliance on foreign fuel imports, but also to significantly reduce our national carbon dioxide (CO_2) emissions and to accelerate our transition to a carbon-light environment. Simply put, deep shale natural gas and oil formation development is critical to America's energy needs and its economic renewal.

Experts have known for years that natural gas and oil deposits existed in deep shale formations, but until recently the vast quantities of natural gas and oil in these formations were not thought to be recoverable. Today, through the use of fracking, combined with sophisticated horizontal drilling, extraordinary amounts of natural gas and oil from deep shale formations across the United States are being safely produced.

Fracking has been used by the natural gas and oil industry since the 1940s and has become a key element of natural gas and oil development worldwide. In fact, this process is used in nearly all natural gas wells drilled in the United States today. Properly conducted modern fracking is a highly engineered, controlled, sophisticated and safe procedure.



Chesapeake's major deep shale play operating areas

KEY POINTS

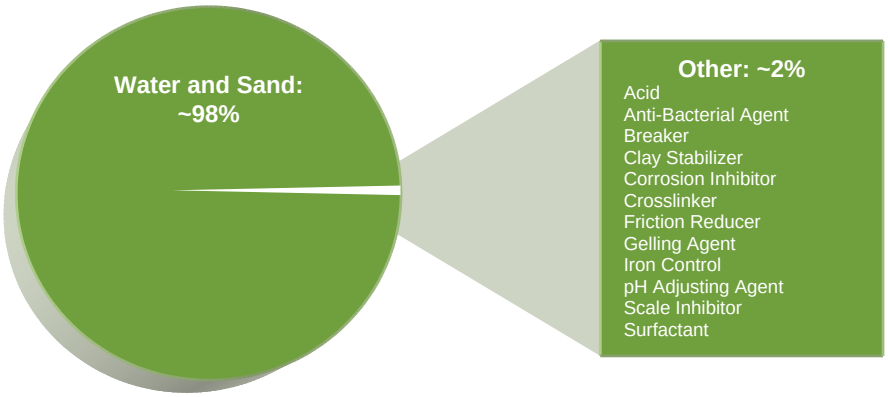
- Fracking is essential for the production of natural gas and oil from shale formations.
- Fracking fluids are comprised of approximately 98% water and sand and are handled in self-contained systems.
- Freshwater aquifers are protected by multiple layers of protective steel casing surrounded by cement; this is administered and enforced under state regulations.
- Deep shale natural gas and oil formations exist many thousands of feet underground.

What is fracking?

Fracking is the process of creating fissures, or fractures, in underground formations to allow natural gas and oil to flow. In Chesapeake Energy Corporation's (Chesapeake's) deep shale natural gas and oil plays, water, sand and other additives are pumped under high pressure into the formation to create fractures. The fluid is approximately 98% water and sand, along with a small amount of special-purpose additives. The newly created fractures are "propped" open by the sand, which allows the natural gas and oil to flow into the wellbore and be collected at the surface. Normally a fracking operation is only performed once in the life of a well. Variables such as rock formations and thickness of the targeted shale formation are studied by scientists before fracking is conducted. The result is a highly sophisticated process that optimizes the network of fractures and keeps them safely contained within the boundaries of the deep shale natural gas or oil formation.

Fracking Fluid Makeup

In addition to water and sand, other additives are used to allow fracking to be performed in a safe and effective manner. Additives used in fracking fluids include a number of compounds found in common consumer products.



Example of Typical Deep Shale Fracturing Fluid Makeup

A representation showing the percent by volume of typical deep shale natural gas or oil hydraulic fracturing fluid components (see graphic) reveals that approximately 98% of the fracking fluid is comprised of water and sand. Visit www.FracFocus.org for the quantities of additives used to frack Chesapeake and other industry wells. This fluid is injected into deep shale natural gas or oil formations and is typically confined by many thousands of feet of rock layers.

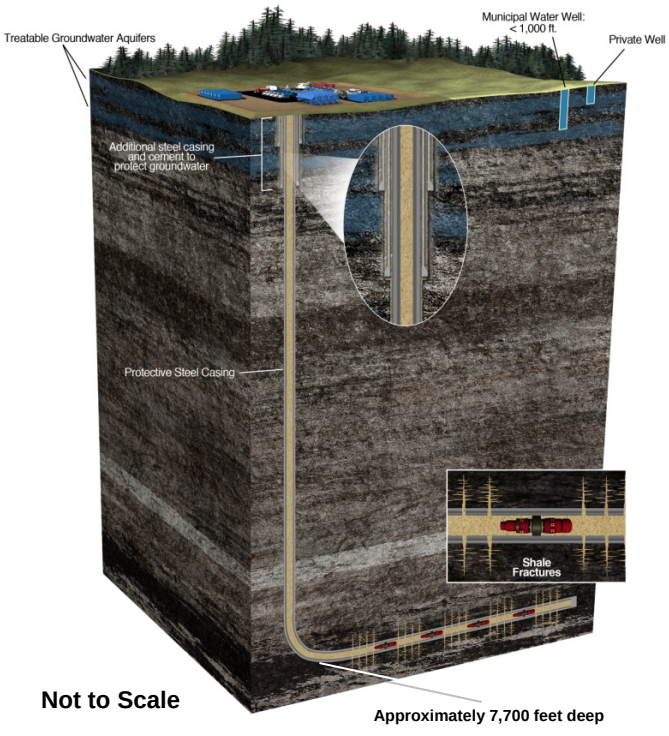
Product	Purpose	Downhole Result	Other Common Uses*
Water and Sand: ~ 98%			
Water	Expand fracture and deliver sand	Some stays in formation while remainder returns with natural formation water as "produced water" (actual amounts returned vary from well to well)	Landscaping, manufacturing
Sand (Proppant)	Allows the fractures to remain open so the gas can escape	Stays in formation, embedded in fractures (used to "prop" fractures open)	Drinking water filtration, play sand, concrete and brick mortar
Other Additives: ~ 2%			
Acid	Helps dissolve minerals and initiate cracks in the rock	Reacts with minerals present in the formation to create salts, water, and carbon dioxide (neutralized)	Swimming pool chemical and cleaner
Anti-Bacterial Agent	Eliminates bacteria in the water that produces corrosive by-products	Reacts with micro-organisms that may be present in the treatment fluid and formation. These micro-organisms break down the product with a small amount of the product returning in produced water.	Disinfectant; sterilizer for medical and dental equipment
Breaker	Allows a delayed breakdown of the gel	Reacts with the "crosslinker" and "gel" once in the formation making it easier for the fluid to flow to the borehole. Reaction produces ammonia and sulfate salts, which are returned in produced water.	Used in hair coloring, as a disinfectant, and in the manufacture of common household plastics
Clay Stabilizer	Prevents formation clays from swelling	Reacts with clays in the formation through a sodium-potassium ion exchange. Reaction results in sodium chloride (table salt), which is returned in produced water.	Used in low-sodium table salt substitute, medicines, and IV fluids
Corrosion Inhibitor	Prevents corrosion of the pipe	Bonds to metal surfaces (pipe) downhole. Any remaining product not bonded is broken down by micro-organisms and consumed or returned in produced water.	Used in pharmaceuticals, acrylic fibers and plastics
Crosslinker	Maintains fluid viscosity as temperature increases	Combines with the "breaker" in the formation to create salts that are returned in produced water	Used in laundry detergents, hand soaps and cosmetics
Friction Reducer	"Slicks" the water to minimize friction	Remains in the formation where temperature and exposure to the "breaker" allows it to be broken down and consumed by naturally occurring micro-organisms. A small amount returns with produced water.	Used in cosmetics including hair, make-up, nail and skin products
Gelling Agent	Thickens the water in order to suspend the sand	Combines with the "breaker" in the formation thus making it much easier for the fluid to flow to the borehole and return in produced water	Cosmetics, baked goods, ice cream, toothpaste, sauces, and salad dressings
Iron Control	Prevents precipitation of metal (in pipe)	Reacts with minerals in the formation to create simple salts, carbon dioxide and water all of which are returned in produced water	Food additive; food and beverages; lemon juice
pH Adjusting Agent	Maintains the effectiveness of other components, such as crosslinkers	Reacts with acidic agents in the treatment fluid to maintain a neutral (non-acidic, non-alkaline) pH. Reaction results in mineral salts, water and carbon dioxide; a portion of each is returned in produced water.	Used in laundry detergents, soap, water softener and dish washer detergents
Scale Inhibitor	Prevents scale deposits downhole and in surface equipment	Product attaches to the formation downhole. The majority of product returns with produced water while remaining reacts with micro-organisms that break down and consume the product.	Used in household cleansers, de-icer, paints, and caulk
Surfactant	Used to increase the viscosity of the fracture fluid	Generally returned with produced water, but in some formations may enter the gas stream and return in the produced natural gas	Used in glass cleaner, multi-surface cleansers, antiperspirant, deodorants and hair-color

*Other common uses of the product, may not be in the same quantity or concentration

Fracking and Groundwater Protection

Unlike shallow natural gas and oil projects, such as shallow coal bed methane (CBM), the producible portions of deep shale natural gas and oil formations exist many thousands of feet below the surface. Across the U.S. the average depth of a Chesapeake well is more than 7,700 feet (almost one and one half miles below the Earth's surface and many thousands of feet below fresh water formations). This number varies depending on the development area. Chesapeake does not conduct any production or fracking activities in fresh groundwater aquifers. In fact, across Chesapeake's deep shale gas operations, groundwater aquifers and producing natural gas and oil formations are separated by thousands of feet of protective rock barriers.

State natural gas and oil regulatory programs place great emphasis on protecting groundwater. Current well construction requirements consist of installing multiple layers of protective steel casing surrounded by cement that is specifically designed and installed to protect freshwater aquifers.



How deep is 7,700 feet?

- Over **six Empire State Buildings** stacked end to end
- **1 ½ times deeper** than the deepest part of the **Grand Canyon**
- More than **25 football fields** laid out goal line to goal line

The measures required by state regulatory agencies in the exploration and production of deep shale natural gas and oil formations have been very effective in protecting drinking water aquifers from contamination attributable to fracking. Based on reviews of state natural gas and oil agencies, there has not been a documented case of drinking water contamination related to the fracking of a deep shale natural or oil well.

Furthermore, the Ground Water Protection Council issued a report in April of 2009 stating that the potential for fracking in deep shale natural gas and oil wells to impact groundwater is extremely remote, as low as one in 200 million.

Information Sources

- Dr. Michael Economides
- Ground Water Protection Council
- United States Department of Energy

About Chesapeake

Chesapeake Energy Corporation is the second-largest producer of natural gas, a Top 15 producer of oil and natural gas liquids and the most active driller of new wells in the U.S. Headquartered in Oklahoma City, the company's operations are focused on discovering and developing unconventional natural gas and oil fields onshore in the U.S. Chesapeake owns leading positions in the Barnett, Haynesville, Bossier, Marcellus and Pearsall natural gas shale plays and in the Granite Wash, Cleveland, Tonkawa, Mississippi Lime, Bone Spring, Avalon, Wolfcamp, Wolfberry, Eagle Ford, Niobrara, Three Forks/Bakken and Utica unconventional liquids plays. The company has also vertically integrated its operations and owns substantial midstream, compression, drilling and oilfield service assets. For more information on Chesapeake environment initiatives, visit the environment section of CHK.com, HydraulicFracturing.com, NaturalGasAirEmssions.com, NaturalGasWaterUsage.com, AskChesapeake.com or FracFocus.com.