



Ohio Environmental Council

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**Testimony before the Ohio House Agriculture and Natural Resources Committee
129th General Assembly**

**Regarding
House Bill 133 – Oil and Gas Extraction on State Lands**

**By
Ellen Mee, Director of Environmental Health Policy, Ohio Environmental Council**

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Chairman Hall, Ranking Member Fedor, and Members of the Committee, I am Ellen Mee, and I am the director of environmental health policy for the Ohio Environmental Council. The OEC is a non-profit network of more than 100 local and state environmental-conservation groups and several thousand individual citizen members. Our mission is to secure clean air, land, and water for all who call Ohio home.

Thank you for the opportunity to present Opponent Testimony on House Bill 133 (As Introduced), which proposes to create the Oil and Gas Leasing Board to consider nominations for oil and natural gas extraction on state-owned and state-controlled lands, including Ohio's state parks.

I had not planned to testify during these hearings, since my colleague, Jack Shaner, very clearly and eloquently stated our organization's position and you either have heard or will hear from Trent Dougherty, OEC's attorney and director of our Environmental Law Center. To reiterate: We strongly oppose HB 133 that would not only open, but would promote and encourage oil and gas drilling on state lands, including state parks, nature preserves and the single state wilderness area currently protected from these activities – the Shawnee Wilderness Area. We are especially opposed to – and are appalled by – the notion of unconventional horizontal hydrofracturing in these very special places. My testimony primarily will address those concerns.

But, as I sat in the earlier hearings and heard Mr. Stewart's testimony on behalf of the Ohio Oil and Gas Association, I couldn't help but think that I'd heard that story before. And, indeed I had. So, here I am.

When my husband and I moved to Ohio, we bought and renovated an 80 year old house in Bexley. One day, I walked downstairs where the contractors were working and found a real mess in the area of my house not under construction. I followed a trail of mud to the carpenter. I asked him about the mud, and suggested he might want to cover the floor and/or take off his boots. Well, Eddie looked me right in the eye and said "my boots don't track mud."

With all due respect to Mr. Stewart and the Ohio Oil and Gas Industry, that's what I heard in Mr. Stewart's testimony. He's looking you right in the eye, and saying the equivalent to "my boots don't track mud." Paraphrasing his testimony from an earlier hearing before this Committee, Mr. Stewart says that the industry has been hydrofracturing for decades ... with no "documented cases" of contamination of an aquifer or wells. But, experiences from other states where horizontal hydrofracturing is occurring, has left a muddy trail. Maybe the Ohio's industry has magic boots, but I don't think so.

As public officials charged with the responsibility for state lands and properties and the policy decisions affecting those lands, it is up to each of you to look at the trail left by the industry's boots. Where might you begin?

You might start by looking at what the industry itself says about the potential for environmental damage and health and safety risks to the public.

According to a February 2011 filing with the Securities and Exchange Commission, Chesapeake Energy, probably the largest drilling company in the region, with very substantial leases throughout Ohio, specifically noted that

“Natural gas and oil operations are subject to many risks, including well blowouts, cratering and explosions, pipe failures, fires, formations with abnormal pressures, uncontrollable flows of natural gas, oil, brine or well fluids and other environmental hazards and risks. Our drilling operations involve risks from high pressures and from mechanical difficulties such as stuck pipes, collapsed casings and separated cables.”¹

Range Resources Corp., another natural gas producer noted similar risks in its SEC filing of May 16, 2006, but also added an additional warning about the problems and challenges of deep-shale drilling:

“As we begin drilling to deeper horizons and in more geologically complex areas, we could experience a greater increase in operating and financial risks due to inherent higher reservoir pressures and unknown downhole risk exposures (*emphasis added*)².

Indeed, Chesapeake’s filing reported enforcement actions pending against it in Pennsylvania and West Virginia related, respectively, to methane migration and compliance with section 404 of the Clean Water Act.

Each of these filings acknowledged potential financial losses due to perhaps what the industry may mean by hiccups -- injury or loss of life, severe damage to or destruction of property, natural resources or equipment; pollution or other environmental damage; clean-up responsibilities; regulatory investigations and administrative, civil and criminal penalties; and injunctions resulting in limitation or suspension of operations, while also asserting that the company may elect to maintain insurance against some, but not all, of the risks described above, and that insurance may not be adequate to cover casualty losses or liabilities. Additionally, the filing notes that insurance does not cover penalties or fines that may be assessed by a governmental authority. Also, in the future we may not be able to obtain insurance at premium levels that justify its purchase.”

So, the industry is saying to you – and Ohioans who are concerned about the risks to their parks and to health and their environment – “trust us, there’s no mud on our boots.” But the language used is artful ... *there are no documented cases of contamination of wells from hydrofracturing*. As you will see from the discussion below, that language is artful and simply is not responsive to the very real concerns that you may about allow heavily industrialized gas production in Ohio’s state parks and special areas.

Under questioning from members of this committee, the industry representative finally did admit that there have been a few “hiccups” in Pennsylvania. Severe damage or destruction of property, pollution and environmental damage? Are these hiccups? Who will be stuck with the bill in Ohio should one of these “hiccups” occur? How will extensive oil and gas drilling on state lands affect the State’s ability to obtain its own insurance on state lands and properties?

Let’s look at a some of the hiccups from our neighbor to the east – Pennsylvania.

During post-fracturing work by Chesapeake Appalachia on three Marcellus Shale gas wells at the Joseph Powers Unit in Pennsylvania five 21,000 gallon tanks containing liquid natural gas exploded into flames during flaring on the well pad, injuring three workers. The 15-alarm fire took four hours to bring under control, all the while billowing black smoke and heavy odors into the air. A drilling company spokesperson said there was "No danger" to residents or the environment. Chesapeake Energy officials disputed reports the fire was caused by hydraulic fracturing, as fracking had been completed at the time of the fire. Rather, a flaring operation had begun at the site.



I’m not sure that Ohioans would care whether the risks to our parks are caused by the hydrofracturing process itself or one of several ancillary activities – Ohio’s parks should not be subject to the risks of gas production. Period. In a letter during the investigation of the fire and explosion, the Pennsylvania Department of Environmental Protection noted that the fire was the second such incident at Chesapeake’s operations in the past year.

Below is another picture of a fire at a gas drilling operation in Pennsylvania. This one occurred in when the pit containing flowback or produced water caught on fire.



I'm sure that most of the members of the Committee have heard about the problems with surface spills, migrating methane gas and contamination of aquifers. These problems are not the figment of an overactive imagination, but are real incidents that have affected real people and Pennsylvania's environment. The Pennsylvania Department of Environmental Protection fined Atlas Resources LLC \$97,350 for allowing used hydraulic fracturing fluids to overflow a wastewater pit and contaminate a high-quality watershed in Hopewell Township, Washington County. The violations were discovered on Dec. 5 and 6, 2009, at the Cowden 17 gas well on Old Trail Road off Route 844. Once the unknown quantity of fluid overflowed the impoundment's banks, it ran over the ground and into a tributary of Dunkle Run. The picture below shows foam in the creek that typically is attributed to the MBAS used in fracturing in shale gas wells.

In addition, the Department of Environmental Protection, Bureau of Oil and Gas Management produced a draft report "Stray Natural Gas Migration Associated with Oil and Gas Wells, that includes almost 15 pages of brief descriptions of incidents, contaminated wells and aquifers in Pennsylvania. While it's certainly possible that not every incident listed might be determined to have been caused by drilling activities – whether specifically the fracturing process, that pesky casing otherwise, again, I suggest

that where there is a muddy trail, we need to consider the possibility that there are muddy boots somewhere nearby.



Are these the visions we have for our parks and natural areas in Ohio – contaminated creeks, fish kills, industrial facilities, flaring wells, trucks like those below which were required for clean up for the Atlas spill?



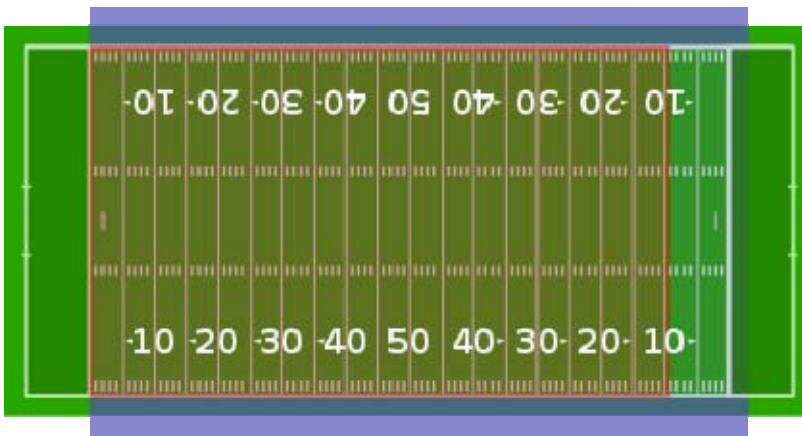
We do not believe that the citizens of Ohio have this vision.

What if there were no hiccups?

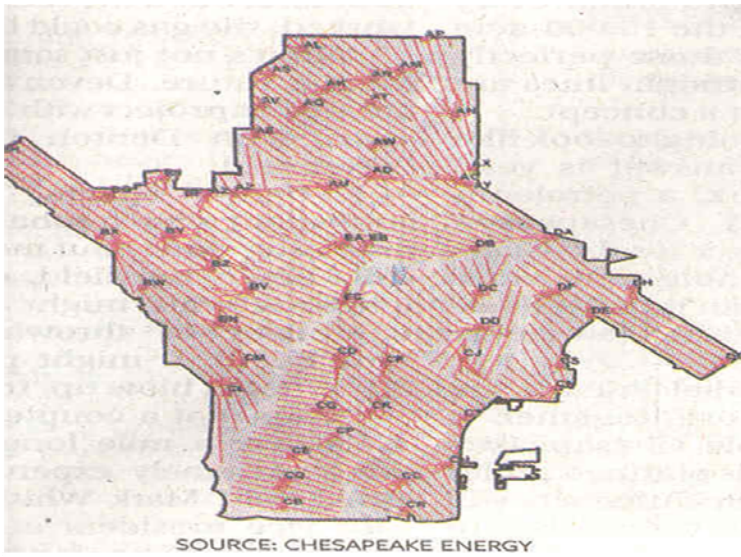
Even if we could legitimately ignore the trail of mud left in every state in which deep shale natural gas drilling has occurred, we need to have a realistic understanding of the consequences of opening our parks to horizontal hydraulic fracturing in the Utica and Marcellus shale plays.

What does it look like? You've heard testimony about the differences between conventional and the "unconventional" drilling practices. The term "unconventional" simply does not do justice or adequately describe what happens in deep shale drilling and the impact on the air, land and water where this occurs. You've heard about the consequences when something goes wrong. But, even if nothing goes terribly wrong – and that's a very big if – the process of industrial natural gas production brings enormous disturbance to the landscape of Ohio's parks and consequent impacts to our land, water, wildlife and, ultimately, to human health.

You've heard testimony that the use of the large well pads for horizontal hydraulic fracturing helps would help to protect the landscape because fewer of them would be required. However, each well pad can be 4 to 5 acres or larger. So, what does this mean? Below is an illustration of one acre interposed on top of a football field. You can see it is just a bit smaller. So, a small to average size well pad is the size of 4-6 football fields put together. There is a lot more to say about the pads themselves, that they are elevated so that the land will be scoured out to build the base.



Below is Chesapeake Energy's illustration of a potential drilling scheme. In order to achieve maximum production and efficiency, the drilling sites need to be contiguous to each other to the maximum extent possible. This particular scheme shows 53 pads on 18,076 acres, reflecting ideal units, with only one developer. Again, this is only a schematic and does not necessarily reflect drilling development in Ohio's state parks. And, as you know, HB 133 limits individual producers to a single tier. How that might concentrate the siting of a variety of kinds of wells is yet to be seen.



Each pad may contain up to eight wells. This is a picture of a well pad that looks like it only has two wells drilled at this point.



Here is a staging area for the development of a natural gas well in the Marcellus Shale play in Pennsylvania.



As you've heard in prior testimony, the process of horizontal hydraulic fracturing may consume from 4 to 7 million gallons of water. Depending on how water is stored, each site (or series of sites) may need pits or ponds for fresh water and may need pits for temporary storage of the produced water. Those pits can be 4 to 5 acres in size or larger.



Some of the fluids used in the hydrofracturing process, called "flowback" or "processed" water are returned to the surface. Only a portion of this waste may be recycled for later use, leaving millions of gallons of wastewater contaminated with toxic chemicals and gasses, as well as heavy

metals and radio nuclides released by the fracking process. While some gas producers claim to recycle most of the processed water for reuse, they are not required to do so and many others do not reuse the flowback water.

The wastes are expected to require a significant increase in the number of new injection wells and disposal to local wastewater treatment facilities. We don't know how many new injection wells we will need, and the injection wells themselves are not without some risk to Ohio's communities and aquifers. The question will need to be considered, as well, whether Class II injections wells (as currently are used for disposal) are the most appropriate class of well for disposal of flowback water that may contain radioactive elements, heavy metals, and toxic chemicals, rather than a more benignly described "salty brine."

Wastewater treatment facilities, however, are not equipped to adequately treat the wastewater before releasing it into Ohio's waters. Pennsylvania gas drillers have sent at least 260 million gallons to wastewater treatment facilities there. Sampling downstream from a treatment facilities that accept fracking wastewater finds radionuclides at 100-1000 times the levels allowable for drinking water. Additionally, evaporation and aerosols from the liquids held in waste lagoons prior to disposal releases hazardous air pollutants, and toxic wastes from a lagoon could be released into the environment due to a storm or pit liner failure.

The U.S. Environmental Protection Agency, Region Two, recently sent a letter to the Pennsylvania Department of Environmental Protection expressing its concern about the contaminants in the wastewater, the potential for harm to the public health, and the impact on wastewater treatment facilities.

"Nevertheless, several sources of data, including reports required by P ADEP, indicate that the wastewater resulting from gas drilling operations (including flowback from hydraulic fracturing and other fluids produced from gas production wells) contains variable and sometimes high concentrations of materials that may present a threat to human health and aquatic environment, including radionuclides, organic chemicals, metals and total dissolved solids. Many of these substances are not completely removed by wastewater treatment facilities, and their discharge may cause or contribute to impaired drinking water quality for downstream users, or harm aquatic life. In addition, high concentrations of these substances may adversely impact the treatment facilities themselves, impairing their ability to remove fecal coliform and other common contaminants in domestic sewage. " (*emphasis added*)

Once the drilling and fracturing has been completed, the well may remain in production for many years. The producer or operator must return the landscape to its prior condition and contours.

But, the well itself is cause for concern because of the toxic emissions that can contaminate the air. The picture below shows flare from a producing well.



At a high-production well or well field, up to 15 or 20 condensate tanks might be needed to store gas and remove some of the moisture. This is a picture from the records of the Texas Commission on Oil and Gas taken with an infrared lens of the emissions coming of a tank in Texas. The pictures below are from the New York Times series of articles examining the environmental and public health impacts from horizontal fracturing. The one of the left is what we can see with the naked eye. The one on the right was taken with an infrared lens and clearly shows the otherwise invisible emissions. The emission can contain benzene, volatile organic compounds, and a variety of other highly contaminants.



A 2009 study of air emissions from oil and gas production in the Barnett Shale region of Texas found emissions of greenhouse gasses to be equivalent to the expected greenhouse gas emissions from two 750 MW coal-fired power plants. Childhood asthma rates are high, peaking at 25% among fourth graders – more than three times the state wide average. Residents near natural gas

operations in Southern Wyoming report experiencing shortness of breath, watery eyes and nose bleeds from ozone levels that exceed those found on a bad day in Los Angeles.

What will be the impact be on the aquatic and wildlife and the natural vegetation that we have in the past committed to protect in our parks and natural areas? The answer is that we don't know. Where are the experts that have been consulted prior to proposing to open our parks to industrialization from oil and gas drilling? Maybe the members of the Committee have been provided with resources to help guide their consideration, but I don't believe that has yet occurred.

Again, we have to ask? Is this the vision that our leaders have for Ohio's parks and preserves? Are the costs really outweighed by the benefits? We don't think so. And we don't think that Ohio's citizens think so either. Look at the mud trail. You are being sold a bill of goods.

¹Chesapeake Energy Corp., et al. 424B2, on 2/9/11. Accession Number 950134-6-10262.

² Range Resources Corp. 424B5, on 5/1/06. Accession Number: 1193125-11-28521