

Brown, Ronda

From: Cynthia Adams [REDACTED]
Sent: Sunday, August 13, 2017 12:39 AM
To: DNR.HFPublicComments
Subject: [External] Fwd: HVHHF-000001

Fracking is going to destroy our state. You want to put the final nail in the coffin? I already sent you an exhaustive list of all the many reasons you must deny this application.

Contaminated soil and water can never be restored completely and will mean millions of dollars to fix.

People will get sick. Some may die.

There are plenty of other opportunities to use this same land to generate energy in ways that don't endanger our future! Wind turbines and solar farms are becoming much more profitable every day.

Fracking is dangerous to human life! Solar farms aren't. It's really that simple. Choose humanity. Save the Earth. Deny this application.

Besides, they didn't even satisfy the requirements of the application. They can't even get the application right. Why would you expect them to do the fracking right?

Deny this application now.

Brown, Ronda

From: Paul Berland [REDACTED]
Sent: Friday, August 18, 2017 10:43 PM
To: DNR.HFPublicComments
Subject: [External] HVVHF-000001 Public Comment

Dear IDNR Staff,

I wanted to make sure you saw and thought about Lora Chamberlain's public comment. This is a very important public comment as it presents much scientific evidence in support of Ms. Fiorino's case and the much positive evidence supporting a direct link between the process of hydraulic fracturing and seismicity.

The remainder of this comment is a reprint of Lora Chamberlain's excellent public comment, which I feel needs to be considered in this case. To ignore this overwhelming scientific data is surely a crime against humanity and reason.

Lora Chamberlain, after an extreme amount of careful research, said:

My comments are about the issue of hydrofracturing induced seismicity which was brought up at the hearing on Aug 2nd, 2017 by Ms. Fiorino.

They are in response to Hearing Officer Schuering's "Recommended Findings" on August 11, 2017, where he made comments about the information presented at the Aug 2nd hearing.

From the "Recommended Findings" in the last paragraph on page 4 and the first paragraph of page 5, Officer Schuering addressed some of Ms. Fiorino's evidence:

"Her testimony acknowledges that many of the sources consulted do not conclude that Hydraulic Fracturing Operations are the cause of induced seismic activity. Rather, many scientific commentators have concluded that Class II Injection Wells are more likely to be one of many industrial factors causing induced seismic activity."

This statement above is incorrect, and appears to reflect a conclusion about hydrofracturing induced seismicity that is not complete or up-to-date. The science around hydrofracturing induced seismicity is evolving rapidly. I will provide below references for several scientific papers and articles with more up to date information and findings about this issue.

These papers and articles were indexed and summarized in the "COMPENDIUM OF SCIENTIFIC, MEDICAL, AND MEDIA FINDINGS DEMONSTRATING RISKS AND HARMS OF FRACKING (UNCONVENTIONAL GAS AND OIL EXTRACTION), Fourth Edition, November 17, 2016", pages 104 - 121,

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injected fluid.

Permit HVHHF-000001 is for a hydrofracking well within the Wabash Valley active earthquake zone - its location, which carries a high risk for induced seismicity, commands that the IDNR do your own due diligence on this issue. HFRA requires that the IDNR act in a responsible manner when considering these high volume hydrofracking permits.

I ask that you review, thoroughly, this list, (below), of newer scientific papers and articles that make the case that deep, horizontal drilling and the hydrofracking process has been, and will be in the future, the direct cause of many cases of induced seismicity.

I also ask that the IDNR do a full scientific literature search for all papers and articles regarding induced seismicity secondary to deep, horizontal drilling and the hydrofracking process. And specifically all research that addresses induced seismicity when the risk is heightened by the location of the well in an active earthquake zone.

Please do your own due diligence before deliberating on HVHHF-000001, the lives and property of Southern Illinois residents are resting on your prudence pertaining to this issue.

Thank you,
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Thank you for considering the scientific information presented in this comment.

Paul Berland

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Brown, Ronda

From: C. [REDACTED]
Sent: Thursday, August 10, 2017 9:13 AM
To: DNR.HFPublicComments
Subject: [External] HVHHF-000001

" increased seismicity where fracking is occurring and oil field waste disposal into Class 2 injection wells. Both the frack well and injection well cited in Woolsey application are within the Wabash Fault zone and is a great concern to citizens throughout the region."

Please do not allow fracking to continue!

Thank you,
C

Brown, Ronda

From: Lora Chamberlain [REDACTED]
Sent: Friday, August 18, 2017 4:05 PM
To: DNR.HFPublicComments
Subject: [External] Re: HVHHF-000001 Public comments regarding hydrofracturing induced seismicity, an issue brought up at the hearing Aug 2, 2017

Re: HVHHF-000001

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(503) Fountain, H. (2013, December 12). Experts eye oil and gas industry as quakes shake Oklahoma. *The New York Times*. Retrieved from <http://www.nytimes.com/2013/12/13/science/earth/as-quakes-shake-oklahoma-scientists-eye-oil-and-gas-industry.html>

September 6, 2012 – The British Columbia Oil and Gas Commission determined that fracking itself causes earthquakes, pointing to the results of a probe into 38 seismic events near fracking operations in the Horn River Basin. The report noted that no quakes had been recorded in the area prior to April 2009, before fracking began. The report recommended that the link between fracking and seismic activity be further examined. (517)

(517) The Canadian Press. (2012, September 6). Fracking causes minor earthquakes, B.C. regulator says. CBC News. Retrieved from <http://www.cbc.ca/news/canada/british-columbia/fracking-causes-minor-earthquakes-b-c-regulator-says-1.1209063>

Brown, Ronda

From: Mark Coats [REDACTED]
Sent: Friday, August 18, 2017 2:08 PM
To: DNR.HFPublicComments
Subject: [External] Public Comment for Review Number HVHHF-000001

Thank you for accepting my comments on IDNR application Review Number HVHHF-000001. Regarding the evaluation of this permit application, it is my grave concern that IDNR is more focused on streamlining the application process, and is less focused on listening and addressing the legitimate concerns of the public. Public Hearing and addendum statements from Barbara McKasson and Karen Fiorino highlight how Woolsey's application inadequately addresses the need to protect the public from hazards such as induced earthquakes, pollution from flowback water, and contamination from radioactive waste. An NRDC report - which was accepted into evidence during this Hearing - details these and many other application deficiencies. (Surprisingly, IDNR's June 5th application deficiency letter to Woolsey was not originally part of the Public Hearing evidence, although it was later admitted as such.) But now, even this week [IDNR requires further information and details](#) regarding the "handling of fracturing fluids, containment measures, traffic management, the effect on fresh water, water source management and operations details" for this application. And while IDNR evaluates yet another Woolsey submittal, there will be no opportunity for IDNR evaluation of any concerns the public may have regarding this new information. So because of deficiency after deficiency, the people of Illinois have never been given the opportunity to comment - in writing or in public forum - on information contained in a final, completed application.

It is additionally troubling that there has been apparent IDNR resistance to admitting the supplemental testimonies of Mrs. Mona Weaver and Mr. James Walker. As shown in Mrs. Weaver's August 3rd submittal, her property is very close in proximity to the proposed fracking well, and her additional concerns are legitimate if we are to take NRDC's detailed report seriously. And since Mr. Walker was unable to obtain time off from work to attend the Public Hearing, IDNR should make a greater effort to hear his concerns and not merely limit the voices they hear to people who have the privilege and flexibility in their schedules to appear at IDNR's convenience and whim. It is expected that Woolsey would object to Mrs. Weaver's and Mr. Walker's comments, but less so that IDNR would join them in their objections. IDNR can better serve their constitutional obligation to protect our "[right to a healthful environment](#)" by devoting more effort into hearing the legitimate concerns of the people of Southern Illinois, and less effort into ostensibly behaving as if they were Woolsey's lawyers.

Sincerely,
Mark Coats

[REDACTED]

Brown, Ronda

From: Sabrina Hardenbergh [REDACTED]
Sent: Friday, August 18, 2017 4:16 PM
To: DNR.HFPublicComments
Subject: [External] Public Comment for HVHHF-000001

[REDACTED]
August 18, 2017

Department of Natural Resources
Attention Oil and Gas Regulatory Staff
One Natural Resources Way
Springfield IL 62702
Email: DNR.HFPublicComments@illinois.gov

Re: HVHHF-000001

Dear Department of Natural Resources, Oil and Gas Regulatory Staff:

My friends Barb McKassan and Karen Fiorino respectively spoke about water and earthquakes at the recent hearing concerning Woolsey's permit to do high-volume hydraulic fracturing in White County, well HVHHF-000001. I want to point out and emphasize the importance of heeding new scientific information related to water and earthquakes that has come to many people's attention after Illinois passed the high-volume fracturing Act and Rule several years ago, since this new information has made other states and municipalities place bans and moratoriums on high-volume hydraulic fracturing in their locations in order to protect people from the industry's serious hazards, of which there are many more to consider as well.

Barb spoke on our water supply being overused and polluted by the industry. Most of us in southern Illinois rely on groundwater for our drinking water, which comes from reservoirs and wells, fed by streams and aquifers. Mr. Woolsey's Fairfield blowout site with open polluted waste water pit and well already proves the company and its contractors have a poor track record as to safety. We should note the Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking that caused New York a few years ago to ban fracking because of dangers to water and health, among other issues. The Compendium is now in its 4th edition with added data. Also, the Southwest Pennsylvania Environmental Health Project has an Environmental Health Toolkit with more information. Please consider the impact of Woolsey well and its pollution on southern Illinoisans' health. Please consider that using up our water, and subjecting people to buy expensive hauled water from water companies, rather than our municipal sources or wells, is very unreasonable in a low-income region, or any region.

<http://concernedhealthny.org/compendium/>
https://www.nytimes.com/2014/12/18/nyregion/cuomo-to-ban-fracking-in-new-york-state-citing-health-risks.html?_r=2
<http://www.environmentalhealthproject.org/healthcare-providers/cme-ceu>

Karen spoke about earthquakes caused by water injection wells that go hand in hand with any oil extraction well, including Woolsey's proposed HVHHF-000001. Oklahoma has had a high increase in earthquakes that are linked to water injection wells used as one method to dispose waste from the high-volume hydraulic fracturing wells and other conventional/stimulated wells. USGS and university researchers have published such data after Illinois' high-volume hydraulic fracturing Act and Rule were authorized a few years ago, so this new data should be considered presently with this and any other well permit. Southern Illinois already is on the New Madrid and Wabash seismic fault lines, where we do not need any more factors prompting a higher occurrence of earthquakes damaging or destroying our homes, business buildings, roads, waterlines and other pipelines, or other infrastructure. Already it is hard to obtain or afford earthquake insurance, either because it is excluded in policies, or comes at a great extra rider cost. The increase in earthquakes from oil and gas industry activity in our region will just make this worse. Who would put earthquake inducing wells on a seismic fault line, except people grabbing short-term profits at the expense of damages to many others?

<https://www.usgs.gov/news/evidence-unconventional-oil-and-gas-wastewater-found-surface-waters-near-underground-injection>

<https://www.usgs.gov/news/6-facts-about-human-caused-earthquakes>

<https://pubs.er.usgs.gov/publication/ofr20161035>

<https://www.ecowatch.com/induced-earthquakes-increase-chances-of-damaging-shaking-wastewater-di-1882199998.html>

Given this and other scientific information, and many examples across the United States, when we have renewable and other alternative energy and energy efficiency options now, to continue to permit the hazardous high-volume hydraulic fracturing and many stimulated types of oil extraction and its ancillary water injection wells is an abdication of duty to protect southern Illinoisans from harm. I have formerly worked in personal injury/employment/work comp law, in healthcare quality improvement, and in health research, and what I read about the many hazards of the oil and gas industry make me wish the IDNR, our government officials, and people who propose such oil and gas extraction would take their jobs much more seriously, and protect Americans from the many harms the oil and gas industry is repeatedly inflicting upon us, whether water overuse and pollution, earthquakes, or the whole gamut of climate change issues and boom-bust economic and social dysfunction and crime sorts of problems that are seen with this fossil fuel industry.

Please deny the HVHFF-000001 permit, and any others similar to it.

Sincerely,

Sabrina Hardenbergh



Brown, Ronda

From: Vito Mastrangelo [REDACTED]
Sent: Friday, August 18, 2017 4:39 PM
To: DNR.HFPublicComments
Subject: [External] Public Comment for HVHHF No. 1
Attachments: HVHHF #1-Public Comment-Vito Mastrangelo-8-18-17.rtf

Attached please find my comment for permit application HVHHF No. 1.

Vito Mastrangelo

COMMENT DIRECTED TO APPLICATION FOR HVHHF PERMIT

APPLICANT: Woolsey Operating Company, LLC, a Kansas limited liability company
IDNR Review No. HVHHF-000001

Submitted by: Vito Mastrangelo
August 18, 2017

IDNR must deny this permit application for the following reasons.

The site of the proposed HVHHF operations lies within the Wabash Valley Seismic Zone, and nearby the New Madrid Fault Zone, and to allow an HVHHF operation and related wells for the disposal of wastewater in this area would increase the likelihood of earthquakes to a degree unknown even to geologists. That would be reckless.

Woolsey's application does not comply with IDNR regulations (62 Ill. Adm. Code Sec. 245.210(d); see also 62 Ill. Adm. Code Sec. 245.300(b)(3)(d)) requiring extra precautions to protect the components in the plans for fluids and flowback, well site safety, containment, and casing and cementing.

In a report created after a series of earthquakes in Oklahoma in December 2014 (ranging from magnitude 3.5 to magnitude 4.1) and one in Kansas on January 4, 2015 (magnitude 3.5), the U.S. Geological Service acknowledged that human activity—fossil fuel extraction and fluid injection both—induces earthquakes and that the precise mechanism of how this happens is unknown:

“Earthquakes east of the Rocky Mountains, although less frequent than in the West, are typically felt over a much broader region than earthquakes of similar magnitude in the west. East of the Rockies, an earthquake can be felt over an area more than ten times larger than a similar magnitude earthquake on the west coast. It would not be unusual for a magnitude 4.0 earthquake in eastern or central North America to be felt by a significant percentage of the population in many communities more than 100 km (60 mi) from its source. A magnitude 5.5 earthquake in eastern or central North America might be felt by much of the population out to more than 500 km (300 mi) from its source. Earthquakes east of the Rockies that are centered in populated areas and large enough to cause damage are, similarly, likely to cause damage out to greater distances than earthquakes of the same magnitude centered in western North America.

Most earthquakes in North America east of the Rockies occur as faulting within bedrock, usually miles deep. Few earthquakes east of the Rockies, however, have been definitely linked to mapped geologic faults, in contrast to the situation at plate boundaries such as California's San Andreas fault system, where scientists can commonly use geologic evidence to identify a fault that has produced a large earthquake and that is likely to produce large future earthquakes. Scientists who study eastern and central North America earthquakes often work from the hypothesis that modern earthquakes occur as the result of slip on preexisting faults

that were formed in earlier geologic eras and that have been reactivated under the current stress conditions. The bedrock of Eastern North America is, however, laced with faults that were active in earlier geologic eras, and few of these faults are known to have been active in the current geologic era. In most areas east of the Rockies, the likelihood of future damaging earthquakes is currently estimated from the frequencies and sizes of instrumentally recorded earthquakes or earthquakes documented in historical records.

Induced Seismicity

As is the case elsewhere in the world, there is evidence that some central and eastern North America earthquakes have been triggered or caused by human activities that have altered the stress conditions in earth's crust sufficiently to induce faulting. Activities that have induced felt earthquakes in some geologic environments have included impoundment of water behind dams, injection of fluid into the earth's crust, extraction of fluid or gas, and removal of rock in mining or quarrying operations. In much of eastern and central North America, the number of earthquakes suspected of having been induced is much smaller than the number of natural earthquakes, but in some regions, such as the south-central states of the U.S., a significant majority of recent earthquakes are thought by many seismologists to have been human-induced. Even within areas with many human-induced earthquakes, however, the activity that seems to induce seismicity at one location may be taking place at many other locations without inducing felt earthquakes. In addition, regions with frequent induced earthquakes may also be subject to damaging earthquakes that would have occurred independently of human activity. Making a strong scientific case for a causative link between a particular human activity and a particular sequence of earthquakes typically involves special studies devoted specifically to the question. Such investigations usually address the process by which the suspected triggering activity might have significantly altered stresses in the bedrock at the earthquake source, and they commonly address the ways in which the characteristics of the suspected human-triggered earthquakes differ from the characteristics of natural earthquakes in the region.” (Emphasis added.)

—“Tectonic Summary: Earthquakes in the Stable Continental Region, Natural Occurring Earthquake Activity”, retrieved from <http://earthquake.usgs.gov/earthquakes/eventpage/usc000tblj#summary> on January 5, 2015.

This proposed well site is either within or very near an area identified by U.S. Geological Service models as having a 2% or more probability of exceedance (in 50 years) of peak ground acceleration of 0.4 standard gravity (g) or more and was in such an area in the 2008 modeling (see USGS Documentation for the 2014 Update of the United States National Seismic Hazard Maps, ofr 2014-1091, at 6).

But in a 2016 report, the USGS acknowledged that the 2014 modeling did not include induced earthquakes:

“As in previous hazard models, nontectonic events were removed from consideration in the 2014 hazard assessment, so that model does not consider mining-related seismicity or earthquakes caused by wastewater injection or other human activities.”

— 2016 One-Year Seismic Hazard Forecast for the Central and Eastern United States from Induced and Natural Earthquakes (2016 USGS Forecast), at 1.

The USGS notes the concerns caused by recent increases in induced earthquake activity:

“Earthquake rates have recently increased markedly in multiple areas of the Central and Eastern United States (CEUS), especially since 2010, and scientific studies have linked the majority of this increased activity to wastewater injection in deep disposal wells (table 1) (Ellsworth, 2013; Keranen and others, 2014; Walsh and Zoback, 2015; Weingarten and others, 2015). Figure 1 shows the location of wells associated with earthquakes (Weingarten and others, 2015) and a timeline of earthquake rates, and figure 2 shows the seismicity maps for varying time intervals in the CEUS. Between 1980 and about 2010, CEUS earthquake rates were relatively stable, but recent rates in some areas have increased by more than an order of magnitude. Such changes have caused concern to many, including residents, business owners, engineers, and public officials responsible for mitigating or responding to the effects of these earthquakes on nearby populations (for example, Ground Water Protection Council and Interstate Oil and Gas Compact Commission, 2015).” (Emphasis added.)

— 2016 USGS Forecast at 2.

“Even though induced earthquakes are not considered in building-code maps, they create seismic hazard to buildings, bridges, pipelines, and other important structures and are a concern for about 7.9 million people living in the vicinity of these events. Several damaging earthquakes have occurred recently near injection wells While peak acceleration ground shaking values may not correlate as well as peak ground velocity or other measures with damage (Worden and others, 2010), these examples illustrate that high ground shaking is occurring at sites near wastewater disposal wells.”

— 2016 USGS Forecast at 10.

One of the conclusions from the two hazard models in the 2016 USGS Forecast:

“Forecasts from these two hazard models are significantly higher than the 2014 NSHM by a factor of 3 or more.”

— 2016 USGS Forecast at 41.

So, in 2016, USGS noted significantly higher earthquake risks in areas where induced earthquakes occur, and yet IDNR has not revised or amended its seismicity regulations

since they were adopted in 2014.

Respectfully Submitted,
s/ Vito Mastrangelo



Brown, Ronda

From: Vito Mastrangelo [REDACTED]
Sent: Friday, August 18, 2017 4:42 PM
To: DNR.HFPublicComments
Subject: [External] Fwd: Public Comment for HVHHF No. 1
Attachments: HVHHF #1-Public Comment-Vito Mastrangelo-8-18-17.pdf

Here is my comment in PDF format. Same comment, different file format.

----- Forwarded Message -----

Subject: Public Comment for HVHHF No. 1
Date: Fri, 18 Aug 2017 16:39:10 -0500
From: Vito Mastrangelo <vitoamastrangelo@gmail.com>
To: DNR.HFPublicComments@illinois.gov

Attached please find my comment for permit application HVHHF No. 1.

Vito Mastrangelo

COMMENT DIRECTED TO APPLICATION FOR HVHHF PERMIT

APPLICANT: Woolsey Operating Company, LLC, a Kansas limited liability company
IDNR Review No. HVHHF-000001

Submitted by: Vito Mastrangelo
August 18, 2017

IDNR must deny this permit application for the following reasons.

The site of the proposed HVHHF operations lies within the Wabash Valley Seismic Zone, and nearby the New Madrid Fault Zone, and to allow an HVHHF operation and related wells for the disposal of wastewater in this area would increase the likelihood of earthquakes to a degree unknown even to geologists. That would be reckless.

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that modern earthquakes occur as the result of slip on preexisting faults that were formed in earlier geologic eras and that have been reactivated under the current stress conditions. The bedrock of Eastern North America is, however, laced with faults that were active in earlier geologic eras, and few of these faults are known to have been active in the current geologic era. In most areas east of the Rockies, the likelihood of future damaging earthquakes is currently estimated from the frequencies and sizes of instrumentally recorded earthquakes or earthquakes documented in historical records.

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— 2016 USGS Forecast at 2.

“Even though induced earthquakes are not considered in building-code maps, they create seismic hazard to buildings, bridges, pipelines, and other important structures and are a concern for about 7.9 million people living in the vicinity of these events. Several damaging earthquakes have occurred recently near injection wells While peak acceleration ground shaking values may not correlate as well as peak ground velocity or other measures with damage (Worden and others, 2010), these examples illustrate that high ground shaking is occurring at sites near wastewater disposal wells.”

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So, in 2016, USGS noted significantly higher earthquake risks in areas where induced earthquakes occur, and yet IDNR has not revised or amended its seismicity regulations since they were adopted in 2014.

Respectfully Submitted,
s/ Vito Mastrangelo

A solid black rectangular redaction box covering the signature area.

Brown, Ronda

From: Annette McMichael [REDACTED]
Sent: Tuesday, August 15, 2017 9:55 PM
To: DNR.HFPublicComments
Subject: [External] Review number HVHHF-000001

<http://fox2now.com/2017/08/15/two-small-earthquakes-shake-new-madrid-zone-in-southeast-missouri/>

These small earthquakes that happened today are a reminder why those of us in Southern Illinois don't want fracking.

The USGS gave the New Madrid Fault a 7 – 10% chance for a catastrophic event in any 50-year period. It has been scientifically proven that fracking's injection wells cause earthquakes. It is criminal for anyone to even think of fracking in an earthquake zone like ours.

This threat is very real to those of us who live here. I live on a ridge less than 50 miles south of the proposed sites. Please help us stop this insanity.

Brown, Ronda

From: Annette McMichael [REDACTED]
Sent: Wednesday, August 16, 2017 8:53 PM
To: DNR.HFPublicComments
Subject: [External] Fwd: HVHHF-000001

<http://www.npr.org/sections/thetwo-way/2017/08/03/541298754/earthquake-shakes-central-oklahoma-one-of-7-in-28-hours>

More earthquakes in OK as a result of injection wells. Don't let Woolsey frack our faults.

Brown, Ronda

From: Stephen Nickels [REDACTED]
Sent: Thursday, August 17, 2017 6:55 PM
To: DNR.HFPublicComments
Subject: [External] Comment HVHHF #000001

Stephen Nickels

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Comment on Permit Application HVHHF # 000001

Woolsey Oil Companies have applied for a permit to perform a High Volume Horizontal Hydraulic Fracture in order to extract "Tight Oil" from shale rock in Southern Illinois, White County.

Section 1-60 of the Hydraulic Fracturing Regulatory Act (HFRA) (a) *The Department may suspend, revoke, or refuse to issue a HVHHF permit under this act for one or more of the following causes: (4) using fraudulent, coercive, or dishonest practices, or demonstrating incompetence, untrustworthiness, or...*

I direct your attention to the pattern of dishonest practices, incompetence & untrustworthiness Woolsey Operating and it's various entities have demonstrated. In 2011 Woolsey Operating Companies were accused of using Diesel as part of a fracking fluid mix at two wells in Kansas. At first Mr. Woolsey denied it, then in an aw shucks manner *Mr. Woolsey said he didn't recall much about those specific wells, but his company has never used oil or other hydrocarbons to extract more oil. Then he said using oil & byproducts used to extract more oil used to be a common practice in the industry.* Next he dissembled, *"If you took the sand out, you could drink that stuff"*, he stated of his Frack Fluid. Then he outright lied, *"One of our biggest objectives is to protect the environment."* If the preceding statement were true we would have no need for IEPA, or IDNR. All the oil companies would be "looking out for the environment", just another example of a dishonest statement by Mr. Woolsey.

In January of 2014 Woolsey Operating had a blowout at a well in Illinois as documented by members of Southern Illinoisans Against Fracturing Our Environment (SAFE) :

Fairfield Rig Explosion Highlights Loopholes in Illinois Fracking Regulations

On a sub-zero degree Monday, January 27th, the casing blew out of a Woosley Operating Company oil rig near Highway 15 southeast of Fairfield, IL, wherein, two SAFE volunteers witnessed the wreckage the following Tuesday morning. Local reports said that two workers were injured in this explosion. A Wayne County Press article downplayed it as a “hydrogen” frack on a conventional vertical oil well. However, witnesses documented a [Nabors](#) nitrogen tanker truck, [Franklin Well Services](#) trucks that were removing damaged rig parts, an open unlined waste water pit, and the frozen blowout fluid all over the immediate adjacent cornfield where there was no setback for the rig or pit. What appeared to be a volunteer firefighter truck and state government minivan were onsite. [Franklin Wells Services](#) is a drilling fluids and fracking supply and equipment company, with Halliburton related methods, and offices in Vincennes, IN and Lawrenceville, IL. [Nabors](#), a very large global drilling company, that drilled the world’s first horizontal well, also does slant drilling and offshore drilling. Apparently this operation, that appeared to be an unsuccessful nitrogen test frack, was in violation of existing regulations, but SAFE does not have further information on its status. SAFE witnesses reported their findings to the Attorney General’s office, but decisions rest with IDNR on how to handle the incident.

Despite the mandate in HFRA that all violations of drilling regulations in the previous five years be listed on the permit application, HVHHF #000001 lists no violations. This is another example of incompetence of Woolsey Operating companies. Woolsey Operating Companies have an oil well blowout, allegedly causing injuries to two workers, then Woolsey Operating Companies have the hubris to omit the violations which clearly occurred within the HFRA mandated time frame of five years prior to the permit application HVHHF #000001. Willful omissions of pertinent information demonstrate both incompetence and Untrustworthy behavior.

Permit Application HVHHF # 000001 was so flawed when submitted that it was rejected outright by IDNR. Permit Application HVHHF # 000001 was so flawed when submitted the Deficiency letter sent by IDNR to Woolsey Operating Companies ran 14 pages. Permit Application HVHHF # 000001 was so flawed when submitted the list of omissions and errors submitted by Natural Resources Defense Council to IDNR in objection to issuance of permit HVHHF #000001 required 27 pages to document. Being unable to file a complete and accurate permit application is an example of gross incompetence.

Integrity like virginity is something you can only lose once. Integrity is necessary to be worthy of trust. I submit Wayne Woolsey & Woolsey Operating Companies lost their integrity a long time ago. Woolsey Operating Companies are neither Competent or Trustworthy enough to be allowed to practice the Extreme Extraction method that is Fracking for oil in the great state of Illinois. Fracking is a complex combination of science & engineering, if Woolsey Operating Companies can't even submit a complete and honest permit application (HVHHF #000001) how can Woolsey Operating Companies be trusted to successfully Frack for Oil in Illinois without harming either their workers or the environment. I urge Illinois Department of Natural Resources to reject permit application HVHHF #000001 for demonstrating gross incompetence and untrustworthiness.

Brown, Ronda

From: Dolores Pino [REDACTED]
Sent: Friday, August 18, 2017 4:50 PM
To: DNR.HFPublicComments; Ilformatoriumonfracking
Subject: [External] Comments Regarding HF Permit Application HVVHF-000001
Attachments: Bill_11-Protection of Radioactivity in Fracturing Act.doc; Radioactivity Associated With Hydraulic Fracturing.docx

Dear IDNR:

I strongly urge the Illinois DNR to REJECT and DENY this application for a permit to conduct hydraulic fracturing in Illinois.

Because 1, 2) and 3) .

1) in other states (e.g., PA) where they have released fracking wastewater -- they have found deadly radioactivity up to 12 miles away, and there are NO regulations or controls currently in Illinois to prevent this widespread radioactive contamination, isn't this correct?

Here are excerpts from this recent report:

"A Pennsylvania report estimates that in 2015, 10,000 unconventional oil and gas wells in the Marcellus Shale produced 1.7 billion gallons of wastewater. The facilities that collect the water provide only limited treatment before releasing it into surface waters. Bill Burgos and colleagues at Penn State, Colorado State and Dartmouth wanted to see what impact this strategy of treating and releasing fracking wastewater might be having."

"Elevated levels of radium were also found as far as 12 miles downstream of the treatment plants. The researchers say that the potential risks associated with this contamination are unknown, but they suggest tighter regulations of wastewater disposal could help protect the environment and human health."

[Release of treated wastewater from hydraulic fracturing contaminates lake - American Chemical Society](#)



2) This absence of any proper regulations in governing Illinois or federal law to control radioactivity in fracking highly serious, life and death matters should PREVENT the IDNR from approving this permit on this issue ALONE!!!!

There is NO "safe" level of radioactivity: it is deadly, carcinogenic, and mutagenic. The history of humans' interaction with radioactivity is the history of the underestimation of its lethality.

On June 29, 2005, the National Academy of Sciences published its "BEIR VII" report, containing the conclusion as to the current state of scientific knowledge about the human health effects of exposure to "low" levels of radioactivity. Their conclusion is that there is no "safe" level of ionizing radiation, or no level at which there is no risk of harm to human health (especially cancer causation). See http://dels.nas.edu/dels/rpt_briefs/beir_vii_final.pdf. [Yet, the federal health standards for exposure to ionizing radiation have not been changed to take this information into account. Further, in the scientific field of "radiation microbiology," scientists are discovering types of damage to living cells when the high-speed particle is emitted from radioactive molecules from even "low" levels of ionizing radiation that include: damage to DNA leading to cancer causation, "imperfect DNA repair," genetic mutations passed on to the next generation, damage to other cell structures causing other types of cell damage/death, and "bystander" cell damage/death.]

3) Many Citizens raised these MASSIVE problems regarding the potential widespread, deadly contamination by the radioactive fracking waste BEFORE the statute and regulations were enacted, yet NOTHING was done about this massive, life and death problem -- please see the attached draft bill and handout which detail the radioactive fracking waste problem and provide some of the solutions, which were ignored by the IL legislature and the IDNR.

If the IDNR allows fracking to begin in Illinois under this permit and others, with NO adequate controls on the radioactive waste that will result, there will be large and needless areas of land contaminated by deadly, killing radioactivity, along with GREAT risk to all who work in and around fracking operations.

Please DO NOT allow this permit to be approved. It MUST be studied further, and these radioactivity problems MUST be resolved PRIOR to any fracking being allowed in our great State of Illinois.

Thank you very much for your time, consideration, and the opportunity to comment on this matter.

Sincerely yours,

Dolores C. Pino, B.A., J.D.
Attorney at Law





The Protection from Radioactivity in Fracturing Amendments of 2014

99th General Assembly
State of Illinois
2014 and 2015
SB/HB _____

Introduced (Date) _____, by (Name of Rep/Sen) _____

SYNOPSIS AS INTRODUCED:

225 ILCS 732/1-21

Amends the Hydraulic Fracturing Regulatory Act to help ensure that the public health, safety and welfare and the environment of Illinois is not harmed by the radioactivity generated by high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations for extraction of oil, liquid natural gas and natural gas, by requiring all high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations for extraction of oil, liquid natural gas and natural gas to comply with the Low Level Radioactive Waste Management Act and all other existing applicable laws relating to protection from and control of industry-generated radioactivity, before drilling occurs. Effective immediately.

Whereas: Radioactivity (ionizing) is energy given off as either particles or rays from the unstable nucleus of an atom (U.S. EPA, Radiation Protection, Glossary);

Whereas: There is no level of ionizing radiation which is considered to be safe, or no level at which there is no risk of harm to human health, and even very low doses can cause cancer (National Academy of Sciences “BEIR VII” report, June 9, 2005, the Seventh Biological Effects of Ionizing Radiation report on “Health Risks from Exposure to Low Levels of Ionizing Radiation,” at http://dels.nas.edu/dels/rpt_briefs/beir_vii_final.pdf;

Whereas: Since this issue was last considered by the Illinois General Assembly, new factual information has come to light regarding significant levels of radioactive waste being generated by high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations for extraction of oil, liquid natural gas and natural gas in other states due to the radioactivity present in underground rock and shale formations, especially in “produced water/ liquids,” and drilling waste debris from high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations for extraction of oil, liquid natural gas and natural gas;

Whereas: High volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations for extraction of oil, liquid natural gas and natural gas brings up massive amounts of shale debris, flowback water and produced water from underground, which bring with it radioactive elements such as uranium-235 and uranium-238, radium-226, radium-228, bismuth-214, lead-214, actinium-228, thallium-208, and many decay products, including radon gas;

The Protection from Radioactivity in Fracturing Amendments of 2014

Whereas: Radon is the second leading cause of lung cancer and is an important environmental radioactive toxin. Radon is inert and is not burned off by flaring, and to release it into the air in large quantities is a very serious occupational and public health concern;

Whereas: In Pennsylvania recently, waste water from high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations for extraction of oil, liquid natural gas and natural gas was allowed to be processed at municipal water treatment plants, after which radioactivity was found being discharged from these plants into rivers and streams. Municipal water treatment plants are not able to remove radioactive elements effectively;

Whereas: Illinois shale contains above average levels of uranium. The U.S. Geological Survey has reported that at times waste from drilling for extraction of oil, liquid natural gas and natural gas in Southern Illinois has radioactive radium levels above 1,000 picoCuries per liter which is *200 times* the maximum contamination level of the EPA drinking water standard;

Whereas: It is the policy and obligation of the State of Illinois to regulate and control the manufacture, storage, treatment and disposal and reduce the generation of low level radioactive waste in Illinois. (The US Central Midwest Interstate Low Level Radioactive Waste Compact Act <http://www.gpo.gov/fdsys/pkg/BILLS-103hr4814enr/pdf/BILLS-103hr4814enr.pdf>);

Whereas: It is the policy of the State of Illinois that the protection of residents from the hazards of radioactive material is as important and fundamental a public policy as protecting them from crimes of violence. *Wheeler v. Caterpillar Tractor Co.*, 108 Ill.2d 502, 511 (Ill. S. Ct. 1985).

A BILL FOR

AN ACT concerning regulation and concerning protection from and controlling radioactivity generated in high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations for extraction of oil, liquid natural gas and natural gas

Short Title: The Protection from Radioactivity in Fracturing Amendments of 2014.

Be it enacted by the People of the State of Illinois, represented in the General Assembly:

Section 5. The Hydraulic Fracturing Regulatory Act is amended by adding Section 1-21 as follows:

The Protection from Radioactivity in Fracturing Amendments of 2014

(225 ILCS 732/1-21)

Control of Radioactivity in High Volume, Horizontal Hydraulic Fracturing Operations and/or Horizontal (lateral) Drilling With Fracturing Operations

Sec. 1-21. Applicability – additional. In addition to the Applicability defined in Sec. 1-20 of the Hydraulic Fracturing Regulatory Act, this new added section applies to all activities surrounding and including all high volume, horizontal hydraulic fracturing well(s) and operations and/or horizontal (lateral) drilling well(s) with fracturing operations for extraction of oil, liquid natural gas and natural gas.

(a) Prohibition. The Director shall suspend acceptance, approval, and issuance of all new permits or amended permits for high volume, horizontal hydraulic fracturing well(s) and operations and/or horizontal (lateral) drilling well(s) with fracturing operations for extraction of oil, liquid natural gas and natural gas under this Hydraulic Fracturing Regulatory Act, the Illinois Oil and Gas Act, and any other law, on the effective date of this amendatory act.

(b) Radioactivity brought up in waste by high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations for extraction of oil, liquid natural gas and natural gas defined as TENORM.

(1) Definitions

(A) “Low Level Radioactive Waste” has the meaning defined in the Illinois Low Level Radioactive Waste Management Act, 420 ILCS 20/1 and following.

(B) “Radiation” includes alpha rays, beta rays, gamma rays, X-rays, neutrons, high-speed electrons, high-speed protons, and other atomic particles; but such term does not include sound or radio waves, or visible light, or infrared or ultraviolet light, as defined in 29 CFR 1910.1096(a)(1).

(C) “Radioactive matter” means any material which emits, by spontaneous nuclear disintegration, corpuscular or electromagnetic emanations, as defined in 29 C.F.R. 1910.1096(a)(2).

(D) “TENORM” means Technologically Enhanced Naturally Occurring Radioactive Material, and is defined as naturally occurring radioactive material whose radionuclide concentrations are increased **by** or as a result of past or present human practices. TENORM does not include background radiation or the natural radioactivity of rocks or soils. TENORM does not include "source material" and "byproduct material" as both are defined in the Atomic Energy Act of 1954, as amended (AEA 42 USC §2011 et seq.) and relevant regulations implemented by the NRC. (The Conference of Radiation Control Program Directors)

(2) Waste generated by high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations for extraction of oil, liquid natural gas and natural gas, specifically including but not limited to: all waste matter, all flowback water, produced water, all flowback and produced non-water liquids, fluids and other non-water matter, all drill cuttings, radium salt precipitate (scale) found coating pipes, tanks and equipment, slurries, muds, drill casings, worker protection clothing and equipment, shall be classified as TENORM and low level radioactive waste, until proven otherwise by at least two testings for radioactivity and radioactive elements, using a

The Protection from Radioactivity in Fracturing Amendments of 2014

laboratory that must be accredited by the federal government, and using U.S. Department of Energy spectrographic protocols for radioactivity, and include at minimum: testing for total gross alpha, beta and gamma rays, and speciated testing for radioactive uranium-235 and uranium-238, thorium-232, radium-226, radium-228, bismuth-214, lead-214, actinium-228, thallium-208, and including radon gas, at 14 + or - 5 days after the flowback period begins or the day of or day before the end of flowback, if flowback ends before 9 days, and at 65 + or - 5 days after the flowback period ends, (65 + or - 5 days shall be during the phase of operations when "produced water" or produced fluids is/are being pumped to the surface from the well(s).

(3) All waste water, fluids and waste debris, as defined in subsection (b) (2) of this Section 1-21, shall be treated as TENORM, until all tests defined in (b) (2) of this Section 1-21 are returned from the laboratories to the appropriate personnel at the Illinois Emergency Management Agency, (IEMA) for their review and written directives for the labeling, management, transportation, treatment, disposal, handling, OSHA implications, and public health notifications for the tested waste water, fluids and waste debris, and until these directives have been sent from IEMA to the Department for their implementation and enforcement, and until the well operator has been notified of these directives by the Department.

(4) All waste water, fluids and waste debris must be handled at all times according to the requirements of the Illinois Low Level Radioactive Waste Management Act, 420 ILCS 20/1 and following, and all other applicable state and federal laws and regulations governing TENORM, low level radioactive waste, and radioactive matter, until all tests defined in (b) (2) of this Section 1-21 are returned from the laboratories to the appropriate personnel at the Illinois Emergency Management Agency, (IEMA) for their review and written directives for the labeling, management, transportation, treatment, disposal, handling, OSHA implications, and public health notifications for the tested waste water, fluids and waste debris, and these directives have been sent from IEMA to the Department for their implementation and enforcement, and until the well operator has been notified of these directives by the Department. (Assuming this is different from (3)?)

(5) This Act and its related regulations shall be construed *in pari materia* with the Illinois Low Level Radioactive Waste Management Act, 420 ILCS 20/1 and following, the Central Midwest Interstate Low-Level Radioactive Waste Compact, and all other applicable state and federal laws and regulations governing radioactive matter.

(6) When all tests defined in (b) (2) of this Section 1-21 are returned from the laboratories to the appropriate personnel **in** the Illinois Emergency Management Agency, (IEMA), for their review and written directives for the labeling, management, transportation, treatment, disposal, handling, OSHA implications, and public health notifications for the tested waste water and waste debris, and these directives have been sent from IEMA to the Department for their implementation and enforcement, and that the well operator has been notified of these directives by the Department, if and when all test results have been determined to be below the thresholds for TENORM and Low Level Radioactive Waste by the appropriate personnel **at** the Illinois Emergency Management Agency, (IEMA), then if the appropriate personnel at the Illinois Emergency Management Agency, (IEMA), concurs, then the Director may determine that the tested well and its operations does not constitute low level radioactive waste and may

The Protection from Radioactivity in Fracturing Amendments of 2014

exempt the well and its operations from compliance with Illinois Low Level Radioactive Waste Management Act, 420 ILCS 20/1 and, the Central Midwest Interstate Low-Level Radioactive Waste Compact.

(7) For a determination of whether radioactivity testing on the waste from a specific well and its operations is/are sufficient, or in the directives that result from the testing for the labeling, management, transportation, treatment, disposal, handling, OSHA implications, and public health notifications for the tested waste water, fluids and waste debris, the decisions of the appropriate personnel at the Illinois Emergency Management Agency, (IEMA), will be final and must be accepted and implemented by the Department.

(c) Radioactivity in Fracturing Waste Task Force – creation.

(1) A seven-person Radioactivity in Fracturing Waste Task Force shall be created and shall consist of the following representatives:

(A) Two representative chosen by the Director of the Illinois Emergency Management Agency,

(B) One representative chosen by the Director of the Illinois Department of Natural Resources,

(C) One representative chosen by the Director of the Groundwater Advisory Council established under the Illinois Groundwater Protection Act,

(D) One representative chosen by the Illinois Environmental Protection Agency,

(E) One representative chosen by the Illinois Department of Public Health.

(F) One representative chosen by the Illinois Department of Labor, with a working knowledge of OSHA standards for working with and around radioactivity.

(2) Members of the Radioactivity in Fracturing Operations Task Force shall be named within 60 days of passage of this Act and directed by the representative chosen from the Illinois Department of Public Health and shall:

(A) Meet at least once a month, either in person or through conferencing capabilities.

(B) Operate without remuneration but with all expenses paid for the functioning of the Task Force to be allocated by the Illinois Emergency Management Agency.

(C) Provide a fully researched report as described in subsection (3) of this section.

(D) Hold at least three public hearings throughout Illinois to discuss these issues and solicit input from the public.

(E) Write recommended amendments to the Hydraulic Fracturing Regulatory Act needed to conform the Act to the Low Level Radioactive Waste Management Act and its related administrative rules, and all other existing state and federal applicable laws regarding radioactivity and protection of workers from radioactivity.

(F) Write a recommended complete set of regulations based on those developed by The Conference of Radiation Control Program Directors, model regulation for TENORM, Part N of “Suggested State Regulation on Control of Radiation,” and enabling statute, for high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations for extraction of oil, liquid natural gas and natural gas in Illinois.

(G) Write a recommended complete set of regulations for the protection of every person handling any matter used or generated in and by high volume, horizontal

The Protection from Radioactivity in Fracturing Amendments of 2014

hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations for extraction of oil, liquid natural gas and natural gas, at the minimum requirements as set forth in OSHA regulation 29 C.F.R. 1910.1096. These recommended regulations will include penalties for any person, corporation, or other entity who requires as a condition of employment, forces, coerces, enters into an oral or written contract for the procurement of, or otherwise obtains or attempts to obtain any less protective worker protection measures than the minimum as provided in 29 C.F.R. 1910.1096, including through, by, from, or with any subcontractor or subsidiary corporation, of a Class 4 Felony and fines of up to \$1,000,000.00 per day per violation per person or entity. The regulations will also include provision for an interested person to apply to the Circuit Court for issuance of an injunction to enforce compliance, with damages and attorney's fees.

(H) Fully investigate any and all adverse effects of high volume hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations with regard to:

(i) the oil and natural gas wells, Class 2 disposal wells, the industry infrastructure and pipelines and their effects and potential risks to human health and the environment from TENORM and low level radioactive waste used in and generated by high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations for extraction of oil, liquid natural gas and natural gas,

(ii) the environmental and public health effects of TENORM and low level radioactive waste used in and generated by high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations for extraction of oil, liquid natural gas and natural gas of spillage, leakage, fires or blowouts of oil, liquid natural gas, and natural gas, its containment, processing infrastructure and transportation infrastructure,

(iii) the environmental and public health effects of TENORM and low level radioactive waste used in and generated by high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations for extraction of oil, liquid natural gas and natural gas of spillage or leakage from open fracturing waste pits, and

(iv) the environmental damage and public health effects TENORM and low level radioactive waste used in or generated by high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations for extraction of oil, liquid natural gas and natural gas of spillage, leakage, fires or blowouts of hydraulic fracturing or fracturing fluids, chemicals, proppants and byproducts, its containment, processing infrastructure and transportation infrastructure.

(v) the environmental damage and public health effects of TENORM and low level radioactive waste used in or generated by high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations for extraction of oil, liquid natural gas and natural gas to water resources and water sheds.

(vi) the recommended documentation of the DOE testing protocols for radioactive matter used in or generated by high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations for extraction of oil, liquid natural gas and natural gas.

The Protection from Radioactivity in Fracturing Amendments of 2014

(vii) the recommended, comprehensive documentation system and permanent retention of all documentation for tracking all TENORM and low level radioactive waste used in or generated by high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations for extraction of oil, liquid natural gas and natural gas, from drilling site to transport to its disposition

(viii) recommended best practices for radon monitors at the high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations. If radon is found to be released from the high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations in large quantities, then recommendations for precautions for workers and residents should be given.

(ix) Radon is inert and is not burned off by flaring, so release into the air in large quantities is a very serious public health concern. The federal government recognizes this and has notified the oil, liquid natural gas and natural gas extraction industry that in 2015 they can no longer flare off gas from the high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations, they must capture it. Best practices regarding this issue shall be included in this report.

(x) Recommendations for testing natural gas, liquid natural gas and oil produced in Illinois for radon, and best practices of recommendations should it test high at the wellhead (such as quarantining this gas and or oil and or liquid natural gas until it is safe to sell.)

(xi) recommendations for best practices for hand-held radiation monitors on the sites of high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations and dosimeters worn by the workers to measure for Total Gamma and Total Beta as a general alert, as well as radon monitors worn by the workers, and for complying with OSHA standards if the monitors and dosimeters exceed acceptable limits, and or the radioactivity testing of fracturing waste is reported out with results that dictate compliance with all OSHA standards for radioactivity in the work place.

(xii) recommendations for implementation of the testing of all fracturing waste, and the regulatory framework stated in this Act, and recommendations for the communication and timely follow up of testing of all fracturing waste, and recommendations for the determinations of methods of labeling, management, transportation, treatment, disposal, handling, OSHA implications, and public health notifications described in this Act, by and between the appropriate personnel at the Illinois Emergency Management Agency, and the Department.

(3) The Task Force shall investigate the issues delineated in this bill and write a report to be submitted to the General Assembly, Governor, Hydraulic Fracturing Task Force, Illinois Water Survey, Illinois Emergency Management Agency, Illinois Department of Natural Resources, Groundwater Advisory Council established under the Illinois Groundwater Protection Act, Illinois Environment Protection Agency, Illinois Ground Water Association, Illinois Department of Public Health, and to the public via the website of the Illinois Emergency Management Agency and the website of Illinois Department of Natural Resources outlining the effects of high volume hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations in

The Protection from Radioactivity in Fracturing Amendments of 2014

relation to TENORM and low level radioactive waste, which shall include recommendations and conclusions about:

(A) the three sets of recommended regulations and amendments to the Hydraulic Fracturing Regulatory Act described in E, F, and G

(B) the risks of drilling and extracting oil, liquid natural gas and natural gas in relation to TENORM and low level radioactive waste.

(C) the risks of drilling and operating Class 2 disposal wells for oil, liquid natural gas and natural gas waste disposal in relation to TENORM and low level radioactive waste.

(D) the use of high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations waste or wastewater open pits in relation to TENORM and low level radioactive waste, and the public health and environmental effects,

(E) the risks of spillage and leakage resulting in water contamination from oil, liquid natural gas, and natural gas wells and operations in relation to TENORM and low level radioactive waste.

(F) bonding requirements for high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations and infrastructure in relation to TENORM and low level radioactive waste.

(G) insurance requirements for high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations and infrastructure in relation to TENORM and low level radioactive waste.

(H) best practices for the oil and natural gas industry in relation to TENORM and low level radioactive waste, and

(I) any and all additional recommendations related to TENORM and low level radioactive waste for the oil and natural gas industry and their high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations.

(4) The report should include recommendations to the General Assembly and Governor for legislation to protect the public health, safety, and welfare and the environment of Illinois from any adverse effects of blowouts, spillage, leakage, and damages associated with high volume, horizontal hydraulic fracturing operations and/or horizontal (lateral) drilling with fracturing operations, well(s), drilling, Class 2 disposal wells, waste and waste water containment, transportation including trucking accidents and hazmat emergency planning, pipelines, infrastructure, chemicals, proppants, and byproducts, in relation to TENORM and low level radioactive waste.

(5) This report shall be due 9 months from the effective date of this Act. The Task Force will be disbanded upon releasing their report.

Brown, Ronda

From: Nancy Porter [REDACTED]
Sent: Friday, August 18, 2017 4:18 PM
To: DNR.HFPublicComments
Subject: [External] Fwd: Public Comment

Illinois Department of Natural Resources

Hello,

First, I am concerned with the lack of a transcript from the hearings on the proposed fracking well in White County. I find this lack of information troubling.

Second, I wish to repeat my concerns with the Woolsey project as I previously submitted them to you. See following notes:

----- Forwarded message -----

From: Nancy Porter [REDACTED]
Date: Fri, Jul 28, 2017 at 4:36 PM
Subject: Public Comment
To: DNR.HFPublicComments@illinois.gov

As their company has checkered safety history, I would urge the state of Illinois reject Woolsey's permit for a fracking well operation. In 2014, there was a blowout, for which the company is trying to dodge responsibility on, and Woolsey's new application for a fracking well based in White County, does not provide any required details on storage of materials and those materials will likely involve radioactive wastewater.

If Woolsey does end up proceeding with this well, I would urge the state to carefully maintain its inspection schedule. The concrete and the steel making up the well can be comprised with use. Leaking wells can pollute the areas immediately nearby and also the aquifers below.

Frackers are a boom bust economic cycle. Their period of activity could run around 18 months to 3 years, but the ensuing water pollution, coming thru the aquifers could be lasting for future generations. The EPA has recognized this issue, see EPA report from December 2016.

Is it worth the long term hazards to water pollution for a brief 18 months of natural gas extraction? Smart policy decisions come from carefully weighing the benefits against the cost of a proposed action. I know residents in Pennsylvania whom are most unhappy with the fracking operations in their farming areas.

Thank you for your thoughtful consideration.

Nancy Porter
[REDACTED]

[REDACTED]

[REDACTED]

Nancy J. Porter

Brown, Ronda

From: [REDACTED]
Sent: Tuesday, August 15, 2017 7:29 AM
To: DNR.HFPublicComments
Subject: [External] Review Number: HVHHF-000001

I fully support the granting of permit application number: HVHHF-000001 Amended HVHHF-000003

Woolsey Well Number: Woodrow#1H-310408-193

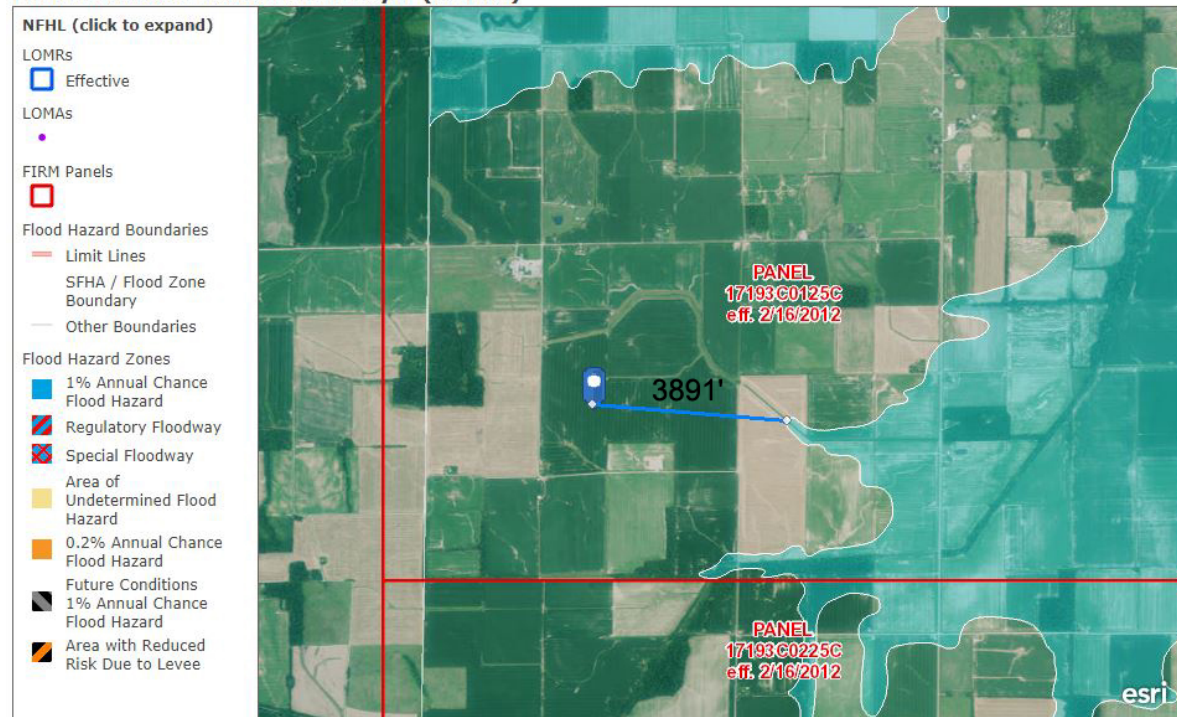
Donald E Sims

[REDACTED]

[REDACTED]

Sent from [Mail](#) for Windows 10

FEMA's National Flood Hazard Layer (Official)



Data from Flood Insurance Rate Maps (FIRMs) where available digitally. New NFHL FIRMette Print app available:
<http://tinyurl.com/j4xwp5e>

Brown, Ronda

From: Cameron Smith [REDACTED]
Sent: Wednesday, August 16, 2017 5:19 PM
To: DNR.HFPublicComments
Subject: [External] Woolsey HVHHF- 000001
Attachments: Woodrow well flood plain.JPG

Cameron Smith



Illinois Department of Natural Resources August 16, 2017
One Natural Resources Way
Springfield, Illinois 62702

IDNR Review Number HVHHF – 000001, Woolsey Operating Co., LLC

Dear Directors of the IDNR,

I am writing to you to show my concern in permitting the first HVHHF well in the state of Illinois. I was one of the handful of citizens who attended the public hearing in Enfield on August 2, 2017. I was a bit bewildered in reading the Recommended Findings by Administrative Law Judge Daniel P. Schuering. I understand I can only commit about what was said at the hearing and/or what was submitted in evidence at the hearing.

Ms Fiorino's concern about seismic activity resonated in me. Growing up in Southern California I did experience my share of earthquakes and I know how destructive they can be. Now living in the Midwest and being a property owner of a 100-year-old solid brick home, and being a co-owner of the historic Fredrick Douglass School in Murphysboro, also made of 100% brick construction, earthquakes are a concern of mine. As we all know, the drilling of the well itself is not the problem in causing earthquakes but it is the Class 2 injection high pressure wells to get rid of flowback water, as Ms Fiorino stated in her testimony. In the report of the BSSA 2006, <http://www.bssaonline.org/content/96/5/1718.abstract> a study of the spatial structure of seismicity in the Wabash Valley of southern Indiana and Illinois was done in November 1995 through June 1996. 534 micro-earthquakes were detected and recorded in the New Harmony area. These earthquakes were artificially induced events, likely related to water injection for the purpose of secondary recovery of petroleum in the Illinois basin in White County. The proof of earthquakes caused by water injection have been know for 22 years or more. But yet IDNR still allows this practice of water injection.


This leads me to Ms McKesson's testimony about the containment and storage of the flowback water. Southern Illinois is known for major flash floods caused by thunder storms, and in Ms McKesson's testimony she was concerned about the lack of detailed plans in the size and depth of the holding ponds that Woolsey plans to use. Once the flowback water has breached the banks of the holding ponds caused by flash flooding, the flow of chemicals will travel into the Little Wabash River and on out to the Ohio River.

Woolsey has stated on its setback plan https://www.dnr.illinois.gov/OilandGas/PendingPermitApplications/02-WellSiteSetbackPlan_Redacted.pdf page 7, that the well is setback 3700 feet to the nearest perennial stream. I have attached a jpeg of an overlay of Woolsey well site and the FEMA's National Flood Hazard Map. On my jpeg the setback is about 200 feet more, but it does show the non-perennial stream as Woolsey has listed on their map. This non-perennial

stream does flow into Lost Creek. On the FEMA map the finger of 1% annual chance of flood hazard does flow up that non-perennial stream that wraps around the projected well site. We do know that flooding can be greater than the 1% zone as stated in ISWS report <http://www.isws.illinois.edu/pubdoc/CR/ISWSCR2008-05.pdf> Identification of Unmapped Special Flood Hazard Areas in Illinois. Lost Creek of White Co is class C and flows into the Skillet Fork and on to the Little Wabash. A class C stream has characteristics of low population and densities within the floodplain, small or no anticipated growth. Class C streams cover an area of 91.7 % but only population of 11%. As we all know everything does flow downhill. The gauge location at the Little Wabash River at Carmi <http://water.weather.gov/ahps2/hydrograph.php?gage=cari2&wfo=pah> is at an elevation of 339.91 feet. The flood stage is 27 above that at elevation, the historic crest was 38.44 feet on 5/12/1961, second highest was 38.34 feet on 5/3/2011. This would make the water level 378.35 feet elevation. Woolsey has the well site at 445 feet elevation that is a difference of 66.65 feet. Most people would think that is enough difference but the Carmi gauge station is around 12 miles east and downstream from Lost Creek and the well site and water does like to find it own happy medium.

At the hearing on August 2, I remember clearly Woolsey's attorney stating they were satisfied that they had dealt with all deficiencies in their amended application. But because of all the public comments and information, INDR has given Woolsey a third chance to get their application correct as of August 14, 2017. <https://www.dnr.illinois.gov/OilandGas/Documents/Second%20Deficiency%20Letter%208-14-17.pdf> . When will enough be enough? The public has stated that they do not want HVVHF in our state. We are the ones who will have to live with IDNR's decision, not Wayne Woolsey. If his company cannot even satisfy the IDNR on paper, how would anyone think that his company can do it in real life? As Ms Fiorino stated, if Woolsey's application is this shabby how good would his work be? Please deny Woolsey's HVVHF-000001 permit.

Sincerely,

Cameron Smith




Virus-free. www.avast.com

Brown, Ronda

From: Jan thomas [REDACTED]
Sent: Friday, August 18, 2017 8:23 AM
To: DNR.HFPublicComments
Subject: [External] HVHHF - 000001

Illinois Department of Natural Resources

Attention: Oil & Gas Regulatory Staff

One Natural Resources Way

Springfield, IL 62702

Re: HVHHF – 000001, Woolsey Operating Co., LLC

I am writing to express my continuing opposition to the granting of this application for the first HVHHF well in Illinois. I attended the hearing on August 2 in Enfield and I have read the Recommendations of the Administrative Law Judge, Mr. Daniel P. Schuering.

I am quite disappointed that the judge seems to take the possibility of earthquake perils so lightly, implying that they are nothing more than a falling jug of milk. The truth is that the proposed well is located inside of the Wabash earthquake zone which in 2008 produced a 5.4 magnitude quake, centered near New Harmony, IN (approximately 20 miles from Enfield, IL) causing damage from Louisville, KY to St. Louis, MO:

https://en.wikipedia.org/wiki/2008_Illinois_earthquake While we know that it is not the fracked wells that cause the earthquakes, it really doesn't matter because the frack wells could not occur without the Class II waste water injection wells which DO cause them. Woolsey anticipates three for this one frack well, also to be located in White County. According to the USGS, injection wells CAN trigger earthquakes at a distance; the exact distance at which this can happen is still unknown. As the owner of a brick home and an historic brick school which houses my small business, I am deeply concerned about this possibility.

As far back as 2006 the Seismological Society of America knew that a cluster of small earthquakes in the mid 1990's in White County, were "likely related to water injection for the purpose of

secondary recovery of petroleum in the Illinois Basin:”

<http://www.bssaonline.org/content/96/5/1718.abstract>

The experts referenced by both Ms. Fiorino and Judge Schuering (Dr. Mark Zoback and Dr. William Ellsworth) are dated 2012 & 2013. Since that time much more has been learned about induced earthquakes, and injection wells have been clearly implicated. The USGS as of March 1, 2017 (<https://www.usgs.gov/news/new-usgs-maps-identify-potential-ground-shaking-hazards-2017>) acknowledges that waste injection wells DO cause earthquakes, and they post annual hazard maps of “human-induced” earthquakes. Currently the highest rates are in NE Oklahoma, where fracking began in 2009, and the number of Class II Injection wells has increased to more than 10,000: “The forecast for induced and natural earthquakes in 2017 is hundreds of times higher than before induced seismicity rates rapidly increased around 2008,.” There is a clear relationship between the level of wastewater injection and resultant earthquakes:

“The 2017 forecasted seismic rates are lower in regions of induced activity due to lower rates of earthquakes in 2016 compared with 2015, which may be related to decreased wastewater injection caused by regulatory actions or by a decrease in unconventional oil and gas production. Nevertheless, the 2017 forecasted hazard is still significantly elevated in Oklahoma compared to the hazard calculated from seismicity before 2009.

<http://srl.geoscienceworld.org/content/early/2017/02/24/0220170005>)

Furthermore, injection well-induced earthquakes pose an additional problem, possibly contributing to well casing failure. In a study of compliance reports from over 41,000 oil and gas wells in Pennsylvania, 2000-2009 (<http://www.pnas.org/content/111/30/10955.full>)

Anthony Ingraffea et al discovered that “Statewide data show a sixfold higher incidence of cement and/or casing issues for shale gas wells relative to conventional wells...Cement barriers may fail at any time over the life of a well for a number of reasons, including hydrostatic imbalances caused by inappropriate cement density, inadequately cleaned bore holes, premature gelation of the cement, excessive fluid loss in the cement, high permeability in the cement slurry, cement shrinkage, radial cracking due to pressure fluctuations in the casings, poor interfacial bonding, and normal deterioration with age.”

Professor Ingraffea concludes that in Pennsylvania 6.2% of well casings failed immediately. Triggered earthquakes would increase these odds dramatically, thus contributing to underground methane migration and possible contamination of water wells and aquifers. Woolsey has not adequately demonstrated that barrier formations have been identified which would prevent this migration.

Dr. Zoback’s first recommendation for managing the possible perils of injection-well-induced earthquakes is “avoid injecting into active faults.” The “traffic light” system comes secondarily. (And note that the 2008 New Harmony quake substantially exceeded the “yellow light”

parameters.) Since the Wabash IS an active fault, this alone should require the rejection of this permit.

As this is Illinois' first application for a fracking permit, it should be treated with the utmost stringency. If Woolsey is not held to the highest standards, the floodgates to fracking in Illinois will be opened, with potentially disastrous consequences.

Please deny this permit.

Thank you and sincerely,

Jan Thomas

[REDACTED]

[REDACTED]



This email has been checked for viruses by Avast antivirus software.
www.avast.com

Brown, Ronda

From: [REDACTED] on behalf of Treesong [REDACTED]
Sent: Wednesday, August 16, 2017 1:42 PM
To: DNR.HFPublicComments
Subject: [External] My Public Comment on HVHHF-000001

To Whom It May Concern:

This is a public comment in regards to the High Volume Horizontal Hydraulic Fracturing Application that is currently undergoing a public comment period. The review number for this application is HVHHF-000001.

The public hearing for this application was held on August 2. I have reviewed evidence and testimony presented at the August 2 hearing regarding this application. I am submitting this public comment because I am convinced by this evidence and testimony that the HVHHF well in question poses a threat to public health and safety.

The evidence and testimony presented at the August 2 hearing included considerable detail about the threat to public health and safety posed by the proposed well. I urge you to give careful consideration to this information. My comments about the following points of information are directly related to the public health and safety risks described in the evidence and testimony of the August 2 hearing:

- Public Health Concerns: Concerned Health Professionals of New York has produced a Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking. These risks apply to HVHHF-000001 and have not been adequately addressed by the permit application.
http://concernedhealthny.org/wp-content/uploads/2016/12/COMPENDIUM-4.0_FINAL_11_16_16Corrected.pdf
- Water: The Environmental Protection Agency has produced an executive summary on the subject of hydraulic fracturing and water titled "Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States." The risks described in this document apply to HVHHF-000001 and have not been adequately addressed by the permit application.
https://www.epa.gov/sites/production/files/2016-12/documents/hfdwa_executive_summary.pdf
- Worker Safety: The National Institute for Occupational Safety and Health (NIOSH) identified exposure to airborne silica as a health hazard to workers conducting some hydraulic fracturing operations during recent field studies. There are no adequate protections against this exposure specified in the permit application, thus endangering workers.
https://www.osha.gov/dts/hazardalerts/hydraulic_frac_hazard_alert.pdf
- Emergency preparedness and protection of public safety: Booth Elementary School is less than 3 miles from the proposed drill site. It's also along the route to the proposed injection well site. The application does not state how it will handle well blowouts and emergency evacuations, especially while school is in session. There is also evidence indicating the inherent health risks to children associated with close proximity to oil and gas development.
<https://www.ncbi.nlm.nih.gov/pubmed/?term=10.1371%2Fjournal.pone.0170423>

These points of information, along with the other evidence and testimony presented at the August 2 hearing, are more than sufficient cause to deny the permit application on the basis of the risk to public health and safety that the proposed well poses. I urge you to do so based on the evidence and on your concern for the health and safety of local residents and workers.

Sincerely,

Treesong



P.S. My full legal name is Treesong. This is not a nickname or pen name. I hope that my uncommon legal name will not delay the entry of my public comment into the public record. I can verify my name and identity if necessary.