

GASLAND DEBUNKED

PART II



Debunking Gasland, Part II



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Three years after the release of *Gasland* – a film panned by independent observers as “fundamentally dishonest” and a “polemic” – the main challenge for director Josh Fox in releasing *Gasland Part II* was manifest: Regain the public’s trust by discarding hyperbole and laying out the challenges and opportunities of shale development as they actually exist in the actual world. In short, do everything a documentary filmmaker *should* do, but which he chose not to do in *Gasland*.

Unfortunately for those who attended the premiere of *Gasland Part II* this past weekend (we were there), Josh eschewed that path entirely, doubling down on the same old, tired talking points, and playing to his narrow base at the exclusion of all others. The [Parker County](#) case? It’s in there. [Dimock](#)? Probably receives more focus than anything else. [Pavillion and EPA](#)? You bet. And yes, that damned banjo of his makes an appearance or two as well.

This isn’t *Gasland Part II*, folks. It’s *Gasland Too*.

Sure, the sequel has some new cast members and a few new claims. Somehow, Fox discovers that shale is actually *worse* than he previously thought: Earthquakes. Methane leaks. Well failures. Hurricanes. Heck, viewers were probably waiting for swarms of locusts to appear – *fracking* locusts, to be sure.

And there was plenty of spectacle, too. Yoko Ono was in the audience. So was former Rep. Maurice Hinchey (D-N.Y.), the congressman who lent his name to the infamous “FRAC Act” that Josh so desperately wants to become law. After the movie, they joined him on stage, along with the Lipskys, John Fenton, Calvin Tillman, and the rest of the “cast.”

But the emotion-filled remarks afterwards – including a plea to push for Mark Jacobson’s “100% renewables” plan as the way to stop natural gas development – were also the perfect bookend to a movement that was always based on sensationalism over substance (Jacobson’s plan is, quite simply, pure [fairy tale](#)). The call to action was more of a cry of desperation (“Please, keep us relevant!”) by a filmmaker, and indeed an entire ideology, whose time has come and gone. As an [early review](#) of the film puts it, *Gasland Part II* “runs longer than the earlier installment, but ultimately it has less to say.”

So, beyond the bigger picture about the waning credibility of the anti-fracking movement, what was in *Gasland Part II*? Where did Fox travel, and with whom did he speak? Given that issues relating to Dimock have been explained *ad nauseum* over the past several years, we won’t go into detail explaining why opponents’ claims about that town are untrue. If you want the real story about Dimock, please go [here](#), and [here](#).

Similarly, the Lipsky case in Parker County, Tex., has been in the news for years, and most of it deals with fraud on the part of local activists, who strategized for months on how to [deceive the public](#) and [get](#)

[the EPA involved](#). The EPA [dropped its case](#), too – not because of election year politics or industry pressure (as Fox alleges), but because [real scientific evidence](#) disproved any link between natural gas development and the methane in the Lipsky water well. In fact, most of what Fox tried to spin out of the case paralleled what several media outlets previously tried to manufacture as a story line, and each one has been [completely debunked](#). It's unclear why Fox would rest his laurels so heavily on a case that the public has moved past, but when you're desperate to remain relevant, you often have to grasp at straws.

However, let's look at some of the case studies and subjects that appeared in the film, and a full discussion about why reality, once again, tells a completely different story.

John Fenton (Pavillion, Wyo.)

Summary: Mr. Fenton was also featured in *Gasland*, providing clarity from the beginning that *Gasland Part II* is little more than a retread of the same themes explored in the first movie. Fenton has [said](#): “When we turn on the tap, the water reeks of hydrocarbons and chemicals,” which he blames on nearby hydraulic fracturing. The town of Pavillion itself has become a flashpoint in the debate over shale development in the United States, premised chiefly on an unreviewed, draft EPA report from December 2011 that theorized a link between hydraulic fracturing and test results from two deep monitoring wells the agency drilled. In *Gasland Part II*, the EPA report is presented as proof that hydraulic fracturing causes water contamination, and Fenton (along with a curse word-laden scene with Louis Meeks) is the vehicle through which Fox presents it.

The Facts: Since at least the 1960s, the U.S. Geological Survey has documented poor water quality in the Wind River Formation, over which Pavillion sits. The reasons vary from naturally-occurring compounds to pesticide and agriculture runoff. Here are a few examples:

- USGS (1992): “Water quality is variable in the Wind River Formation because this unit has highly variable lithology, permeability, and recharge conditions. Dissolved-solids concentrations in water samples from this formation ranged from 211 to 5,110 mg/L.” ([page 82](#))
- USGS (1991): “Dissolved-solids concentrations varied greatly for water samples collected from the 34 geologic units inventoried. **Dissolved-solids concentrations in all water samples ... were 2 to 14 times greater than the Secondary Maximum Contaminant Level of 500 mg/L set by the EPA.**” ([page 103](#); emphasis added)
- USGS (1989): “The ground water in Fremont County was **ranked the fourth most vulnerable to pesticide contamination in Wyoming.** ... Six of the 18 focal pesticides and 1 non-focal pesticide were detected in Fremont County. At least one pesticide was detected in 13 of the 20 wells sampled in Fremont County.” ([USGS fact sheet](#); emphasis added)
- USGS (1969): “Poor drainage resulting in salt accumulation has been a problem in many irrigated areas on the [Wind River] Reservation. McGreevy and others (1969, p. I58-I66) reported numerous drainage problems associated with the [Wind River aquifer], and Peterson and others (1991, p. 10) reported that seepage and salt accumulation became apparent in the Riverton Reclamation Project area **shortly after irrigation started in the 1920s.** ([page 8](#); emphasis added)

Fenton is described in the movie as a person fighting back against the oil and gas industry, a cause he asked the viewers at the premiere to take up themselves. According to [Bloomberg News](#), Fenton receives about \$2,000 per year for each of the 24 gas wells on his property – a fact that neither Josh nor Fenton gave nary a mention.

Meanwhile, EPA’s report on water quality in Pavillion has been exposed as flawed by Wyoming state regulators, the U.S. Bureau of Land Management, and the U.S. Geological Survey. Don Simpson, a high ranking official for BLM, pointed to the possibility of [“bias in the samples”](#) from EPA’s research. In fact, Simpson says that EPA’s findings

“...should not be prematurely used as a line of evidence that supports EPA’s suggestion that gas has migrated into the shallow subsurface due to hydraulic fracturing or improper well completion until more data is collected and analyzed.”

Due to concerns over the EPA’s methods, the agency agreed to retest the wells, and the U.S. Geological Survey was brought in to do its own sampling. When the USGS completed its tests, the EPA prematurely

declared that USGS's findings were "generally consistent" with its own. The only problem? More than 50 of the EPA's [measurements were discredited](#) by the findings of the USGS. In fact, the USGS effectively disqualified one of the EPA's two monitoring wells due to low flow rates and poor construction.

These mistakes are critically important, because they show the EPA may have contaminated the very water the agency was trying to sample. For example, the Wyoming Department of Environmental Quality observed mineral accumulation within one of EPA's monitoring wells, which "indicates the well casing was not constructed of stainless steel as originally reported by EPA. This has been confirmed by EPA." Using the wrong material for well casing can introduce new compounds into groundwater, which will then register in the samples taken from that well.

A Wyoming DEQ geologist [added](#):

"You have low flow rates that increase the time water is in contact with those drilling materials [from the construction of EPA's monitoring well], and materials used in drilling mud can affect groundwater quality. You don't know if it's biasing the results up or down."

Indeed, photos and video from the Wyoming DEQ actually show some of the mineral accumulation and drilling materials found inside the monitoring well, which contributed to the refusal by USGS to take water quality samples from it.

Then there's the issue of the depth of the EPA's monitoring wells themselves. Pavillion's drinking water wells are typically less than 300 feet deep, because state officials have known for decades that drilling deeper could result in striking one of the area's shallow hydrocarbon deposits. But EPA officials drilled two monitoring wells to almost 1,000 feet. That's important for at least two reasons.

First, EPA's theory absolutely hinges upon on the detection of hydrocarbons in those monitoring wells — but you would expect to find hydrocarbons in a monitoring well that was drilled below the aquifer and into a hydrocarbon reservoir. Second, the test results from the area's shallow drinking water wells simply [don't match](#) what the EPA says it found in the deep monitoring wells. That means the EPA's test results from the deep monitoring wells, however flawed, don't have any connection to the shallow wells that actually provide people with drinking water.

Unsurprisingly, when the draft Pavillion report became public in late 2011, then-EPA Administrator Lisa Jackson [said](#): "We have absolutely no indication right now that drinking water is at risk." And several months later, Jackson [told reporters](#), "In no case have we made a definitive determination that the fracking process has caused chemicals to enter groundwater."

Furthermore, in response to the criticism of its methods, the EPA [announced](#) in January 2013 yet another delay in starting the peer-review process for the draft Pavillion report. The announcement of the eight-month postponement also noted: "This draft research report is not final ... and should not be construed to represent Agency policy or views."

Read More:

- *Casper Star-Tribune*: [EPA agrees to more testing of water wells near Pavillion to 'clarify questions'](#)
- S.S. Papadopulos & Associates, Inc.: [Review of U.S. EPA's December 2011 Draft Report](#)
- EID: [Enormous Differences between USGS and EPA on Pavillion](#)
- EID: [Six – Actually, Seven – Questions for EPA on Pavillion](#)

The Parr Family (Wise County, Tex.)

Summary: Bob Parr moved into his home in Wise County, Tex., in 2001. In 2008, Bob and Lisa Parr were married, after which Lisa and her daughter moved into Bob's house. Shortly thereafter, the Parrs claimed to experience health impacts, including nosebleeds, nausea, headaches, and breathing difficulties. In *Gasland Part II*, several photos of the Parrs are shown for dramatic effect, including their daughter's [nosebleed](#) and Lisa's [skin welts](#). The Parrs filed complaints with the Texas Commission on Environmental Quality (TCEQ) in 2010, which investigated and took air samples in the area. The Parrs, meanwhile, relocated to live in Bob's office in Denton. The Parrs also filed a [lawsuit](#) against local operators, seeking punitive damages for environmental and health impacts.

The Facts: Since at least 2010, the Parrs have been working closely with Earthworks, an environmental organization known for its intense and ideologically-driven opposition to oil and gas development. Unsurprisingly, Earthworks has an [entire page](#) devoted to publicizing the Parrs' story, and Lisa Parr was even a [featured speaker](#) at an Earthworks event. Sharon Wilson, a north Texas organizer for Earthworks (who also played a role in "educating" former EPA regional administrator [Al Armendariz](#)), flew to the U.S. EPA's North Carolina office to [present the Parrs' story](#) as one of four "case studies of health impacts caused by natural gas extraction in the Barnett Shale." Wilson also [paid a visit](#) to the Parrs' hometown (and blogged about the same company that the Parrs would later complain about) around the time the Parrs notified TCEQ of their problems.

Earthworks links to [air sampling](#) from TCEQ to support the Parrs' case, which was completed in July 2010 (the group also referenced that test in a [report](#) submitted to the U.S. Department of Energy during a public hearing). Earthworks [claims](#) an outside environmental specialist's tests "detected chemicals in [Lisa's] blood and lungs that match the results of TCEQ's air sampling." For some reason, the Parrs' own lawyer [declined to identify](#) the specialist who conducted the blood tests, although Earthworks identified him as William Rae from Dallas.

Of course, Earthworks did not include the *full* TCEQ sampling report in its write-up of the case study — just the table of measurements. Earthworks also omits any mention that TCEQ completed followup tests a few months later. It was a critical omission, because in the July 2010 results, TCEQ states the [following](#):

"Preliminary review of the available literature indicates that short-term adverse health effects such as respiratory irritation and central nervous system depression related to these chemicals usually occur at concentrations greater than those reported. However, based on the observed adverse health effects experienced by the citizen and the regional investigator, the Toxicology Division (TD) strongly advises emission reduction from this facility."

TCEQ went on to mention that it ordered the company "to reduce emissions" and requested a "follow-up sampling event to monitor ambient air near this facility." Two months later, Earthworks [claimed](#) the exact opposite, alleging that TCEQ's response was limited only to "laughably small fines" and no requirements to compensate the Parrs. A few days after Earthworks' baseless critique, TCEQ released its followup sampling. From that [TCEQ report](#):

"Reported concentrations of target volatile organic compounds (VOCs) were either not detected or were detected below levels of short-term health and/or welfare concern."

To recap: A citizen complaint to TCEQ resulted in an investigation of local activity, and regulators ordered the company to reduce emissions. Two months later, all measurements were below any threshold that would trigger public health impacts.

Of course, Earthworks also cites TCEQ testing done on behalf of the [Ruggiero family](#) (who live near the Parrs) as evidence of high VOCs and other emissions in the area. More specifically, Earthworks references a [January 20, 2010](#) test; one from [February 5, 2010](#); and a test from [March 16, 2010](#). Once

again, Earthworks decided only to post the raw sampling data — not TCEQ’s conclusions and interpretations, which tell a completely different story.

In the [January](#) and [February](#) tests, TCEQ detected certain compounds, but added this statement (which Earthworks failed to mention):

“None of the reported concentrations would be expected to cause adverse health effects.”

For the [March test](#), TCEQ came to an even more benign conclusion:

“Reported concentrations of target volatile organic compounds (VOCs) were either not detected or were detected below levels of short-term health and/or welfare concern.”

TCEQ also mentioned in all three tests that benzene concentrations were below health thresholds.

Read More:

- *Powell Shale Digest*: [Parr Petition against Aruba Petroleum, et al.](#)
- Tex. Comm. on Env. Quality: [Follow-up Air Sampling from Parr Complaint](#)
- Tex. Comm. on Env. Quality: [Wise County Air and Health Tests](#)
- EID: [EPA Official: ‘Crucify’ Operators to ‘Make Examples’ of Them](#)

Calvin Tillman (DISH, Tex.)

Summary: Mr. Tillman, a former mayor of DISH, Texas, played a prominent role in *Gasland*, and regularly tours the country to recite talking points about the supposed dangers of shale. Tillman claims that natural gas development in his community created a range of health problems for local residents, and that those impacts will affect residents in other parts of the country where development is or will be occurring. Tillman decided to get active on the issue after a series of natural gas compressor stations were built near DISH, and he most frequently cites benzene concentrations as the key problem. In *Gasland Part II*, Tillman's story was retold as if it were new, and he is shown driving around his (former) community, pointing out houses of residents who are suing the natural gas industry.

The Facts: The Texas Commission on Environmental Quality (TCEQ) – which is responsible for regulating air emissions in the state – [evaluated Tillman's claims](#), specifically a report from Wolf Eagle Environmental that supposedly found harmful levels of benzene concentrations in DISH. As mayor of DISH, Tillman had contracted Wolf Eagle to conduct that test.

TCEQ's investigation, however, found that the "highest potential 1-hour maximum benzene concentration is below the health effects level," although the agency did stress the need for additional research. The problem was that the Wolf Eagle team measured benzene over an incredibly short period of time, which led TCEQ to conclude that it "was not possible to determine if residents were exposed" to the concentrations that Tillman had claimed.

In other words, Tillman's consultants took a snapshot measurement and suggested it was what residents were being exposed to over a long period of time. That's just not how credible scientific air sampling and analysis works.

It's worth noting, too, that Wolf Eagle Environmental used to go by the name Wolf Eagle Environmental Engineers and Consultants, but later shortened its name after it was revealed that *the company did not actually employ a single licensed professional engineer* on staff. Wolf Eagle Environmental is also the firm that, through its employee Alisa Rich, helped devise a "[strategy](#)" with Parker County, Texas activists to get the EPA involved in a [now-infamous water contamination case](#) in 2010 – a strategy that involved creating a deceptive video to make regulators think a landowner's water was on fire, which they blamed on nearby shale development.

In addition to the TCEQ's findings, the Texas Department of State Health Services (DSHS) later collected blood and urine samples from residents in and around the town of DISH to assess whether Tillman's claims were accurate. DSHS [concluded](#):

"Although a number of VOCs [volatile organic compounds] were detected in some of the blood samples, the pattern of VOC values was not consistent with a community-wide exposure to airborne contaminants, such as those that might be associated with natural gas drilling operations."

DSHS added that the sources of exposure were likely tobacco (those who registered elevated levels of benzene were smokers), public drinking water systems, which include disinfectant byproducts, and even household products like cleaners and lubricants. Although there were limitations to DSHS's review (VOCs are only present in blood for a short period of time), the agency nonetheless stated that its findings "did not indicate that community-wide exposures from gas wells or compressor stations were occurring in the sample population."

In early 2013, Tillman's organization – ShaleTest – claimed to have found high levels of benzene in DISH once again, and cited a TCEQ report that found elevated benzene levels in Fort Worth. TCEQ, however, explained that neither reading crossed the threshold for health impacts. Tillman was once again guilty of

using short-term readings to suggest a long-term exposure problem, a decision that TCEQ said was “[not scientifically appropriate](#).”

Read More:

- Tex. Comm. on Env. Quality: [Health Effects Review of Ambient Air Monitoring Data Collected by Wolf Eagle Environmental Engineers and Consultants](#)
- Tex. Dept. of State Health Services: [Final Report: DISH, Texas Exposure Investigation \(May 2010\)](#)
- *Fort Worth Star-Telegram*: “[Benzene levels at Fort Worth, Dish gas compressor stations questioned](#)”
- EID: [Public Health and Hydraulic Fracturing: Get the Facts](#)
- EID: [Seven Questions for the Mayor of DISH](#)
- EID: [Gasland Star Sees His Shadow in Michigan; Good News for Shale?](#)

Deborah Rogers (Fort Worth, Tex.)

Summary: Ms. Rogers resides in Fort Worth, Tex., and she previously managed investments for Prudential Bache, Merrill Lynch and Smith Barney. She currently owns a business of her own (Deborah's Farmstead). This combined experience led to a three-year appointment to the Small Business and Agricultural Advisory Council of the Federal Reserve Bank's Eleventh District in Dallas. This experience also got her into *Gasland Part II*, where she discusses the industry's plan to export natural gas.

The Facts: *Gasland Part II* suggests exporting a portion of America's abundant natural gas supplies is a conspiracy: get consumers "hooked" on natural gas with rhetoric about "energy independence," then raise prices (by selling to markets where natural gas is more expensive) to boost profits – all at the expense of hardworking Americans. But like most conspiracies, this one requires a willful suspension of disbelief, and a substantial one at that.

First of all, despite the eerie and dark tone of the film in discussing "industry's plan" to sell natural gas to our trading partners, proposed export facilities are actually in the public domain. They're right on the Energy Department's [website](#), for anyone to see. The entire export debate has taken place in the public sphere, too – largely because U.S. law requires that government approval or denial be based on the public interest. Furthermore, the Department of Energy recently held a public comment period on the exports issue, which generated over 180,000 responses. If folks were trying to keep this behind closed doors, it's quite possibly the most poorly executed conspiracy in history.

Second, and more importantly, the "rising prices" angle is just not credible. Fox references a report from the U.S. Energy Information Administration and says in the film that prices could rise "by more than 50 percent." Of course, that was just one of many scenarios considered, and was the least likely of all of them. It assumes, for example, an export scenario that rapidly materializes (which isn't going to happen) and a resource base dramatically less than what the United States knows it has. In fact, the Potential Gas Committee's [latest report](#) on technically recoverable natural gas in the United States showed the highest estimate in the organization's 48-year history. The numbers were, predictably, driven chiefly by shale gas. The EIA assessment that Fox quoted, meanwhile, was based on old data, which EIA has even updated to show even more supply and production coming online in the coming years.

That's why analyses from [Brookings](#) and [Deloitte](#), as well as a landmark report commissioned by the [U.S. Department of Energy](#), all found that the benefits of exports would outweigh the costs, and that any price impacts would be modest. The DOE report concluded specifically that exports would deliver "[net economic benefits](#)" under all scenarios modeled. A [recent study](#) by the Bipartisan Policy Center also found a compelling case for exports, driven largely by projected price impacts that were minimal.

As it turns out, allowing companies in the United States to access markets overseas actually helps the U.S. economy. For most, that's basic economics. In *Gasland Part II*, it's the Illuminati and the Freemasons working together.

So, the conspiracy behind the conspiracy – the man behind the curtain behind the man behind the first curtain: companies in the United States want to sell products to other countries. For the sequel to *Gasland*, could there possibly be a more pathetically fitting conclusion?

Read More:

- *Washington Post*: [Natural gas exports: A boon to the economy](#)
- *The Economist*: [For a cleaner world and richer America, Obama should allow exports](#)
- *New York Times*: [Benefits of gas exports far outweigh any price impacts](#)
- EID: [IPAA and EID Explain to Feds Why LNG Exports Make Sense](#)
- EID: [Exporting Misinformation](#)

Methane ‘Leaks’ and Climate Change

Summary: Critics of natural gas development, armed primarily with research from [activist professors](#) at Cornell University, have suggested that natural gas developed from shale – due to alleged methane “leaks” – actually increases net greenhouse gas emissions. According to this theory, high leakage rates throughout the production, mid-stream distribution, and delivery systems negate the lower CO2 profile of natural gas. Cornell professor Robert Howarth is the “star witness” for this claim in *Gasland Part II*, going so far as to claim that shale gas is actually the “worst” form of energy in terms of greenhouse gas emissions, due to high methane leakage rates.

The Facts: The basis for virtually all claims about methane “leaks” through the development of natural gas from shale comes from a [paper](#) written in 2011 by Cornell professors Robert Howarth and Anthony Ingraffea (both of whom appear in *Gasland Part II*, the latter of whom is also presented as an “expert” in well casing). Within months of its release, the paper had been [debunked by experts](#) at the U.S. Department of Energy and within the academic community. This includes a paper from researchers at Carnegie Mellon University, which was commissioned by none other than the Sierra Club, an entity that opposes natural gas development. Subsequent reports by experts at [MIT](#) – including a lead author of the Fifth Assessment Report of the IPCC – and the Dept. of Energy’s [National Renewable Energy Laboratory](#) demonstrated that life cycle GHG emissions of natural gas developed from shale are not significantly different from those produced by so-called “conventional” natural gas development, contrary to the Howarth thesis.

Here are just a few of the statements from the expert community responding to the Howarth/Ingraffea research:

- “Howarth found a large fraction of produced gas from unconventional wells never made it to end users, assumed that all of that gas was vented as methane, and thus concluded that the global warming impacts were huge. As the [Department of Energy] work explains, though, **62% of that gas isn’t lost at all** – it’s ‘used to power equipment.’” (Michael Levi, Council on Foreign Relations, [May 20, 2011](#))
- “Here we reiterate and substantiate our charges that **none of these [Howarth/Ingraffea’s] conclusions are warranted**, especially in the light of new data and models.” (Cathles et. al., Response to Howarth, [Feb. 29, 2012](#))
- “**We don’t think they’re using credible data** and some of the assumptions they’re making are **biased**. And the comparison they make at the end, my biggest problem, is wrong.” (Paulina Jaramillo, Carnegie Mellon University, [August 24, 2011](#); full CMU study [here](#))
- “Professor Howarth’s conclusion that gas emits more heat trapping gas than carbon **flies in the face of numerous life cycle studies** done around the world.” (John Hanger, former Secretary of Pa. DEP, [April 12, 2011](#))
- “[A]rguments that shale gas is more polluting than coal are **largely unjustified**.” (Hultman et. al., GHG study of unconventional gas, [Oct. 2011](#))

If all that weren’t devastating enough to the Howarth/Ingraffea paper, data released by the U.S. EPA in April 2013 (more specifically, the week before the premiere of *Gasland Part II*) confirm that methane emissions from natural gas systems [actually declined](#) as gas production rapidly expanded. Howarth and Ingraffea used methane emission data from EPA to arrive at their estimates, drawing from data that were published in 2011. But in its latest Greenhouse Gas Inventory, EPA actually revised downward its methane emissions estimates from natural gas systems. The revision was based on better data and the recognition that certain emissions-reducing technologies are far more widely used than previously thought.

As such, the basis for the “shale is worse than coal” talking point has not only been debunked by experts across the board, but it’s also premised entirely on inflated and outdated information.

The reality is that natural gas is providing net benefits in terms of greenhouse gas reductions. The United States did not sign the Kyoto Protocol, nor did it approve a government sanctioned cap-and-trade program. And yet it is the United States that is currently leading all developed nations in reducing CO2 emissions on an annual percentage basis.

The reason? There are actually several – but one of the biggest is that the U.S. power sector is using more natural gas, an increasing share of which is being developed from shale. [According to IEA](#):

“US emissions have now fallen by 430 Mt (7.7%) since 2006, **the largest reduction of all countries or regions**. This development has arisen from lower oil use in the transport sector ... and a substantial shift from coal to gas in the power sector.”

The U.S. Energy Information Administration agrees with IEA’s assessment. As EIA [noted](#) in April:

“U.S. carbon dioxide (CO2) emissions resulting from energy use during the first quarter of 2012 were the lowest in two decades for any January-March period. Normally, CO2 emissions during the year are highest in the first quarter because of strong demand for heat produced by fossil fuels. However, CO2 emissions during January-March 2012 were low due to a combination of three factors...[including] a decline in coal-fired electricity generation, due largely to historically low natural gas prices.”

EIA also observed that total CO2 emissions from energy consumption were at their lowest level since 1992.

For this reason, some of our country’s leading officials, regulators, and academics have contested the assertion that the utilization of natural gas in power generation doesn’t provide net environmental benefits. For example:

- “[A] long-term domestic supply of natural gas is expected to yield environmental benefits... [natural gas] has the lowest carbon dioxide emission factor at combustion of any fossil fuel.” (Belfer Center for Science and International Affairs, Harvard University, [April 2013](#))
- “It boggles the mind why anyone who wants to reduce carbon emissions right now would oppose shale gas production. Nothing has cut US emissions more than low natural gas prices made possible by the shale gas boom.” (John Hanger, former Secretary of Pa. DEP, [Dec. 31, 2012](#))
- “... carbon emissions are declining in the US more than in any other country in the world. The USA is the global climate leader, while Europe and Germany are returning to coal. The main reason is gas, which increased last year by almost the exact same amount that coal declined.” (Michael Shellenberger & Ted Nordhaus, Breakthrough Institute, [March 2013](#))
- “Natural gas plays a key role in our Nation’s clean energy future.” ([U.S. EPA](#))
- “Natural gas is the fossil fuel that produces the lowest amount of GHG per unit of energy consumed and is therefore favoured in mitigation strategies, compared to other fossil fuels.” (Dr. Rajendra Pachauri, Chairman of the U.N. IPCC, [Nov. 2012](#))
- “On balance, we think substituting natural gas for coal can provide net environmental value, including a lower greenhouse gas footprint.” (Mark Brownstein, Environmental Defense Fund, [Sept. 2012](#))

- “We produce more natural gas than ever before — and nearly everyone’s energy bill is lower because of it. And over the last four years, our emissions of the dangerous carbon pollution that threatens our planet have actually fallen.... the natural gas boom has led to cleaner power and greater energy independence. We need to encourage that.” (President Barack Obama, State of the Union, [Feb. 2013](#))

Contrary to what opponents have claimed, the facts clearly show that increased utilization of natural gas – regardless of how it is developed – is helping to reduce greenhouse gas emissions.

Read More:

- U.S. Energy Information Administration: [U.S. Energy-Related CO2 Emissions Lowest Since 1992](#)
- Int’l Energy Agency: [Global Carbon-Dioxide Emissions Increase by 1.0 GT in 2011 to Record High](#)
- *Los Angeles Times*: [EPA: U.S. greenhouse gases drop 1.6% from 2010 to 2011](#)
- The Breakthrough Institute: [Deadly Air Pollution Declines Thanks to Gas Boom](#)
- *The Hill*: [Study: Fracked gas far more climate-friendly than coal](#)
- MIT: [Report: Natural gas can play major role in greenhouse gas reduction](#)
- EID: [EPA’s Massive, Downward Revision of Methane Emissions](#)
- EID: [New Study Debunks Cornell GHG Paper. Again.](#)

Hydraulic Fracturing and Earthquakes

Summary: Josh Fox (and a host of other anti-energy activists) recently leaped into a new area of criticism of hydraulic fracturing, claiming that it causes earthquakes. Predictably, *Gasland Part II* brings up the seismicity issue, chiefly in the context of California and the numerous known faults in the state. Fox previously adopted this talking point after seismic events that occurred in Youngstown, Ohio, in early 2012. In [one interview](#), Fox declared “there is a clear link between earthquakes and fracking,” adding that the use of the technology in the Baldwin Hills (Calif.) oil field could “trigger a 7.4 earthquake,” a claim repeated in *Gasland Part II* to suggest nothing short of the apocalypse for southern California. Seismic events tied to injection wells, which were receiving wastewater from oil and gas development, have even given the media a license to link earthquakes to fracking.

The Facts: According to Bill Ellsworth, a geophysicist with the U.S. Geological Survey who authored a landmark report on seismicity and oil and gas development in 2012, the “clear link” that Fox alleges does not exist. “We find no evidence,” Ellsworth said, “that fracking is related to the occurrence of earthquakes that people are feeling.” Ellsworth later [stated](#): “We don’t see any connection between fracking and earthquakes of any concern to society.”

The [National Research Council](#) has confirmed the USGS findings: “The process of hydraulic fracturing as well as presently implemented for shale gas recovery does not pose a high risk for inducing felt seismic events.” NRC added that “only a very small fraction of injection and extraction activities among the hundreds of thousands of energy development sites in the United States have induced seismicity at levels noticeable to the public.”

The reason for this is simple: the amount of energy needed to complete the hydraulic fracturing process is miniscule compared to what’s recorded during actual seismic events that can be felt by people. So small, in fact, that Stanford University geophysicist Mark Zoback (himself a member of the Dept. of Energy’s shale gas advisory team) told the U.S. Senate that the seismic energy released by the hydraulic fracturing process is “about the same amount of energy as a gallon of milk falling off a kitchen counter.”

Instead, what much of the press has failed to report accurately is that the stories of “fracking-related earthquakes” are actually seismic events resulting from wastewater disposal into injection wells. The U.S. EPA is in charge of regulating these wells (those used for oil and gas are designed as “Class II”), and often grants states “primacy” for enforcement – the well-established system in federal environmental laws since they were passed in the 1970s, which reflects the crucial role of states in regulating industry activity. EPA considers injection wells to be a “[safe and inexpensive option](#)” for disposing of wastewater, be it from oil and gas development or manufacturing or any other process.

Moreover, the link between injection wells and seismicity is actually well-understood and has been acknowledged by federal officials for decades, according to the [U.S. Department of the Interior](#). For example, a series of small earthquakes around Denver, Colo., in the 1960s were traced back to wastewater disposal from a nearby chemical plant.

The risk of such seismic events, however, is incredible low, and in fact can be easily managed by making simple changes (i.e. reducing flow rates). As proof, there are more than 150,000 Class II wells in the United States. Only about 40,000 of them are used specifically for wastewater disposal (others are used for things like enhanced oil recovery), and only a handful of those 40,000 have been linked to seismic events of any significance.

Not surprisingly, the media has often failed to contextualize these facts, opting instead to use the search engine bait of “fracking” in the headlines. When he released a major study on induced seismicity in 2012, Ellsworth (of USGS) actually criticized the media’s role in misrepresenting his work and suggesting he linked fracking to earthquakes. “I was greatly surprised,” Ellsworth told [E&E News](#), “to see how words

were being used in the press in ways that were inappropriate.” Ellsworth added: “The public has legitimate concerns for which it needs good information.”

While academic and government experts alike note that seismicity is not a major concern associated with hydraulic fracturing, that’s not the case with every energy source. In fact, some of the very sources Josh Fox wants to implement on a wider scale have a much larger risk of causing seismic events. In 2011, [Fox noted](#), “we’re for renewable energy ... You know, I was just in Iceland, and there, it’s almost all geothermal and hydroelectric power.”

What Fox either doesn’t know, or conveniently omits, is that hydraulic fracturing is used in conjunction with geothermal power. For precisely that reason, France is now [dealing with the repercussions](#) of promoting geothermal while maintaining a ban on hydraulic fracturing.

And, whereas credible scientists have stated that hydraulic fracturing a well for natural gas recovery does not pose a major risk of creating seismic events, the same cannot be said for geothermal power. Researchers at the [Lawrence Berkeley National Laboratory](#) noted that the nation’s largest geothermal facility – The Geysers just north of San Francisco – was responsible for creating 30,000 seismic events in a span of less than three years – more than 300 of which were above magnitude 2, and six of which were magnitude 4.

The [National Research Council](#) also observed that The Geysers “has the most historically continuous and well documented record of seismic activity associated with any energy technology development in the world.”

We look forward to Josh’s next movie: the perils of the same geothermal power that he wants to expand.

Read More:

- *E&E News*: [Disconnects in public discourse around ‘fracking’ cloud earthquake issue](#)
- National Research Council: [Induced Seismicity Potential in Energy Technologies](#)
- U.S. Department of Interior: [Is the Recent Increase in Felt Earthquakes in the Central US Natural or Manmade?](#)
- EID: [On Shaky Ground](#)

Well Failures and Casing Leaks

Summary: Opponents of shale development often cite a statistic that 60 percent of all shale wells will fail, which will result in polluted underground aquifers and damage to the environment. The claim originates from Cornell professor (and [anti-natural gas](#) activist) [Anthony Ingraffea](#), who claims to have “industry documents” as his source. Ingraffea’s appearance in *Gasland Part II* was thus a foregone conclusion, and Fox spent nearly as much time running through Ingraffea’s CV as he gave to Ingraffea to repeat that talking point.

Riding on Ingraffea’s coattails, [Josh Fox](#) also cited the statistic in an op-ed last summer, as did [Yoko Ono](#) in a recent letter to the *New York Times*. Fox even made the talking point a key part of his short film “[The Sky Is Pink](#),” released last summer. The actual source is a [decade-old article](#) that examined what’s known as sustained casing pressure, or SCP. There is indeed a graph on the second page detailing that, over a 30 year time span, 60 percent of wells will be affected by SCP. The graph appears in *Gasland Part II*, as well.

The Facts: The problem for Ingraffea – who fashions himself an objective scientist – is that the statistic he’s waving around has absolutely nothing to do with shale development. How do we know that? The caption under the graph from which Ingraffea pulled the statistic (and which the camera in *Gasland Part II* does not provide viewers enough time to read) actually states the following:

“Wells with SCP by age. Statistics from the United States Mineral Management Service (MMS) show the percentage of wells with SCP for wells in the outer continental shelf (OCS) area of the Gulf of Mexico, grouped by age of the wells. These data do not include wells in state waters or land locations.” ([p. 63](#))

Read through that again. Notice that it is *referring to activity in the deep waters of the Gulf of Mexico*. Notice as well that it explicitly *excludes any sort of data from onshore development*. Shale wells in the United States are drilled onshore, not thousands of feet deep in the Gulf of Mexico – a fact that Ingraffea, Fox, Yoko, and all the other activists apparently hope the public never discovers.

This would be like preaching about the dangers of convertible automobiles based on statistics relating only to the performance of heavy-duty trucks. It reflects a fundamental ignorance of the very industry that these activists so desperately want to malign. It’s also hilarious that Ingraffea makes this claim in *Gasland Part II* immediately after Fox spends several minutes describing how the professor is the world’s most renowned expert on well casing and cementing. If that were the case, wouldn’t he be able to recognize something as basic as the difference between an onshore and offshore well?

As for sustained casing pressure (SCP), it’s actually a term that refers to the buildup of pressure between casing strings in a well. It does not necessarily refer to a leaking well, or even to a well that soon *will* be leaking. There are a variety of technologies and processes that can address SCP if it appears, too. Ironically, SCP reduction is the whole point of the document that Ingraffea believes is some sort of smoking gun. If you read the article in its entirety, it actually highlights what’s available to the industry to prevent, minimize and even fix SCP.

Once again, Fox and his disciples have demonstrated they do not understand the basic processes they’re trying to explain; and yet, they claim we should trust them anyway.

Let’s take a closer look at the onshore well “failure” issue, though, and this time with data that are actually relevant. An [August 2011 report](#) from the Ground Water Protection Council (GWPC) actually examined data that is relevant to shale development. GWPC reviewed more than 34,000 onshore wells drilled and completed in Ohio between 1983 and 2007. The data show only 12 incidents related to failures of (or graduate erosions to) casing or cement – *a failure rate of 0.03 percent*. Most of those incidents (more

than 80 percent) occurred in the 1980s and 1990s, long before the current technology and updated state regulations that came online over the past decade.

The report also looked at more than 187,000 wells drilled and completed in Texas. The incident rate there: *0.01 percent*.

So, far from shale wells suffering from a failure rate of 60 percent, data from hundreds of thousands of wells show that casing failures occur at a rate of no more than three one-hundredths of one percent. Of course, failure rates – however low they may be already – can always be made lower still. But can we at least agree that folks who rely on the “leaky shale wells” talking point should at least have a grasp of the basic facts – like, for instance, which data do and do not refer to shale wells?

Read More:

- Ground Water Protection Council: [State Oil and Gas Agency Groundwater Investigations – A Two State Review: Ohio and Texas](#)
- *Associated Press*: [Some fracking critics use bad science](#)
- EID: [For Josh Fox, the Sun Also Rises](#)
- EID: [60 percent of statistics are made up](#)

Lobbying and ‘Polluting Our Democracy’

Summary: The first *Gasland* wanted the public to believe that hydraulic fracturing was polluting drinking water. *Gasland Part II* suggests that the companies developing oil and natural gas from shale are also polluting our democracy through targeted lobbying and backdoor meetings with regulators. For that reason, supposedly “proven” cases of water pollution in Dimock, Pa., and Parker County, Tex., were swept under the rug by EPA, and President Obama vocally supported shale gas as merely a clever political move in an election year.

The Facts: Indeed, President Obama now touts the environmental and economic benefits of natural gas, something that Fox references as if to say “even *he* has turned against us!” The U.S. Environmental Protection Agency – which Fox had hoped would be the vehicle to shut down shale gas development – now openly says natural gas is a part of America’s “clean energy future.” A study commissioned by the Sierra Club found considerable environmental benefits from natural gas developed from shale, as compared to other energy options. Shale development has also expanded considerably since the release of *Gasland*.

Gasland Part II makes the audience believe that those facts are all essentially a conspiracy (notice a trend, here?), a series of back room deals and coordinated industry pressure that forced our regulators and elected leaders to abandon their responsibilities. Politics trumps science, Fox might say.

It’s a bold position to take, especially for a guy who claims membership in a group that stands accused of [avoiding lobbying laws](#).

It’s also a fact that, even though some of the big organizations that oppose hydraulic fracturing do not include lobbying as explicit portions of their budgets, the line between explicit lobbying and what is, in effect, lobbying by another name is quite hazy.

Anti-fracking groups bring state lawmakers on “[tours](#)” of Pennsylvania to explain to them how supposedly dangerous shale development is. For a single statewide race, the League of Conservation Voters [funneled \\$50,000](#) to its candidate of choice. We all know how those opposed to energy development use [multiple conduits](#) to fund their objectives, and also toss around lots of cash during [campaign season](#). The head of the Sierra Club has even joined a broader “[Democracy Initiative](#)” in alliance with left-leaning groups to influence the public debate about a range of issues, many of which have nothing to do with the environment.

At its core, though, the “democracy denied” allegation in *Gasland Part II* is supported by little to no actual evidence. He interviews members of Congress who have vocally opposed oil and gas development (former Rep. Dennis Kucinich, Sen. Ben Cardin, Rep. Lois Capps, etc.), and correlates an election year to EPA’s “reversal” of decisions about water contamination in Texas and Pennsylvania. Since the evidence just isn’t there, though, Fox simply asserts it as truth. Because corporations, or something.

The real reason that shale development has expanded is not because of some nefarious plot on the part of industry leaders wearing black robes. Rather, it’s because people across the United States have recognized that there are massive environmental and economic benefits to be reaped: substantially lower air emissions, reduced reliance on imported energy, hundreds of thousands of new jobs, and a revitalization of American manufacturing. Both political parties are pushing for increased responsible natural gas production, and it’s because of the facts, not because they’ve been “captured” by Corporate America. Even Rep. Ed Markey (D-Mass.) – certainly no shill for the oil and gas industry – has [pushed back](#) against groups who oppose domestic natural gas development. “I think environmentalists should want natural gas on the table as an option,” Markey said.

The emblematic example of Fox’s determination to see a conspiracy was his discussion of Pennsylvania Governor Tom Corbett’s election in 2010. *Gasland Part II* explains that Corbett ran on a pro-shale

platform, mentions that Corbett was elected, and then continues to suggest there's a broader back room plan that's subverting democracy. Left unanswered: If Corbett, a Republican, ran explicitly on a pro-shale platform as Fox alleged, then wouldn't voters take that into account? It's not as if Pennsylvania is a bastion of right-wing Republicanism, either; the state hasn't gone for a GOP presidential candidate in more than two decades.

What Fox sees as democracy denied is actually an example of democracy confirmed – it's just that Fox didn't like the results.

Read More:

- *Associated Press*: [NY Fracking Foes: Will Become Lobby if Necessary](#)
- *E&E News*: ['Big Green' groups distancing themselves from Josh Fox](#)
- EID: [Poll: Support for Hydraulic Fracturing Still Exceeds Opposition](#)
- EID: [Key Democrats to Sierra Club: You're Wrong about Natural Gas](#)