



EMM Fracking One-Pagers | 1-10

# Paradise Lost?

[Some Places Are “Too Special” To Frack]

**Q: Why is Garrett County so appetizing to the Oil and Gas industry and what will be the fate of all of its best natural resources... *above ground?***



[engagemmd.org](http://engagemmd.org)



**A: Garrett County is the only county in Maryland positioned solidly within the Marcellus “play”, so it is the logical target for drilling for gas in this state.**

**So what’s the down side of being “Maryland’s Gold Mine”** as Governor Hogan has referred to Western Maryland? The reasons for not fracking are always numerous, but in the case of Garrett County, where tourism and natural beauty are obvious assets, fracking is a glaring example of poor land management. The tourism industry has taken a firm hold here and a reputation as a pristine and relaxing vacation destination gives us an edge over surrounding areas in PA and WV where fracking has drastically altered the balance of nature to industry. Adventure Sports and retirement real estate thrive here, and considering that tourism revenue is one of the most coveted across the spectrum of commerce (because so much is derived from outside the state), a don’t-mess-with-it approach would seem better... if we hope to have assets in the future. Hopefully, as we are beginning this millennium, the region is nearing the end of the coal mining clean-up and we can start to think in terms of revenue streams that focus on our valuable strengths and our “welcoming” resources.

*“Protecting the special places that communities care about most and passing sustainable budgets that support our public lands are the kind of commonsense, bipartisan actions that Americans want to see Congress take – but we cannot and will not hold our breath forever,” ...“we owe it to future generations to act, and President Obama is ready and willing to step up where Congress falls short.”*

*— Sally Jewel, Secretary of the Interior*

# RESOURCES

*(And Why You Need Them)*

Citizen groups fought for a moratorium in early 2015 and succeeded in postponing fracking in Maryland until the fall of 2017. At that point drilling permits will be issued to the gas industry.

## WHAT CAN YOU DO TO HELP?

This is a political battle and your representatives need to be pressured to stop the collateral damage of a soon-to-be outmoded, non-sustainable energy source in our community. The gas extracted from Maryland will likely be shipped abroad, so discussion about energy independence is a distraction.

### **Garrett County Commissioners: Jim Hinebaugh, Paul Edwards & Larry Tichnell**

*These elected officials requested the loosening of State regulations on fracking to attract the gas industry.*

Contact them at: [www.garrettcountry.org](http://www.garrettcountry.org) [Frederick A Thayer III Courthouse-Adm Building, 203 S. Fourth Street, Room 207, Oakland, MD 21550

*Elected in 2014, they quickly formed the SHALE GAS ADVISORY GROUP in preparation for the introduction of high-volume hydraulic fracturing (HVHF). It will be the task of the County and the State to facilitate gas extraction while attempting to manage the considerable disruption that will occur during the drilling period. Following that, the perpetual maintenance of well pads [wells are exhausted, drilling stops and they remain as persistent, hazardous relics of the extraction process] will be a question best answered by WHO?*

### HOUSE OF DELEGATES | **Wendell R. Beitzel**

*Republican, District 1A, Garrett & Allegany Counties*

House Office Building, Room 309, 6 Bladen St., Annapolis, MD 21401

(410) 841-3435, (301) 858-3435 | 1-800-492-7122, ext. 3435 (toll free) | e-mail: [wendell.beitzel@house.state.md.us](mailto:wendell.beitzel@house.state.md.us)

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### SENATE | **George C. Edwards**

*Republican, District 1, Allegany & Garrett Counties, & parts of Washington County*

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**Reps in Congress : Go to >** [WholsMyRepresentative.com](http://WholsMyRepresentative.com) use your zip code.

Use the app: **VoteSpotter** [type in your information and know all your representatives positions on issues]

## KNOW THE FACTS

**Use these sites** to familiarize yourself with what's happening on a local/state level:

[EngageMMD.org](http://EngageMMD.org) [Engage Mountain Maryland]

[CitizenShale.org](http://CitizenShale.org) [Citizen Shale]

[FoodandWaterWatch.org](http://FoodandWaterWatch.org) [Food and Water Watch]

[ChesapeakeClimate.org](http://ChesapeakeClimate.org) [Chesapeake Climate Action Network]

**To find info** on what's already happened in other states that have already invited fracking into their environments and economies use these states as keywords: Pennsylvania, Oklahoma, West Virginia, Texas & California. Then, along with fracking, add keywords like lawsuits, earthquakes, water and food contamination, health risks, etc.

*example: [WVHostFarms.org](http://WVHostFarms.org) [West Virginia Host Farms]*

## TALK TO PEOPLE ABOUT THE ISSUE

Learn as much as you can about how friends, family & neighbors feel about fracking. Ask about how much they know about it and share your knowledge.



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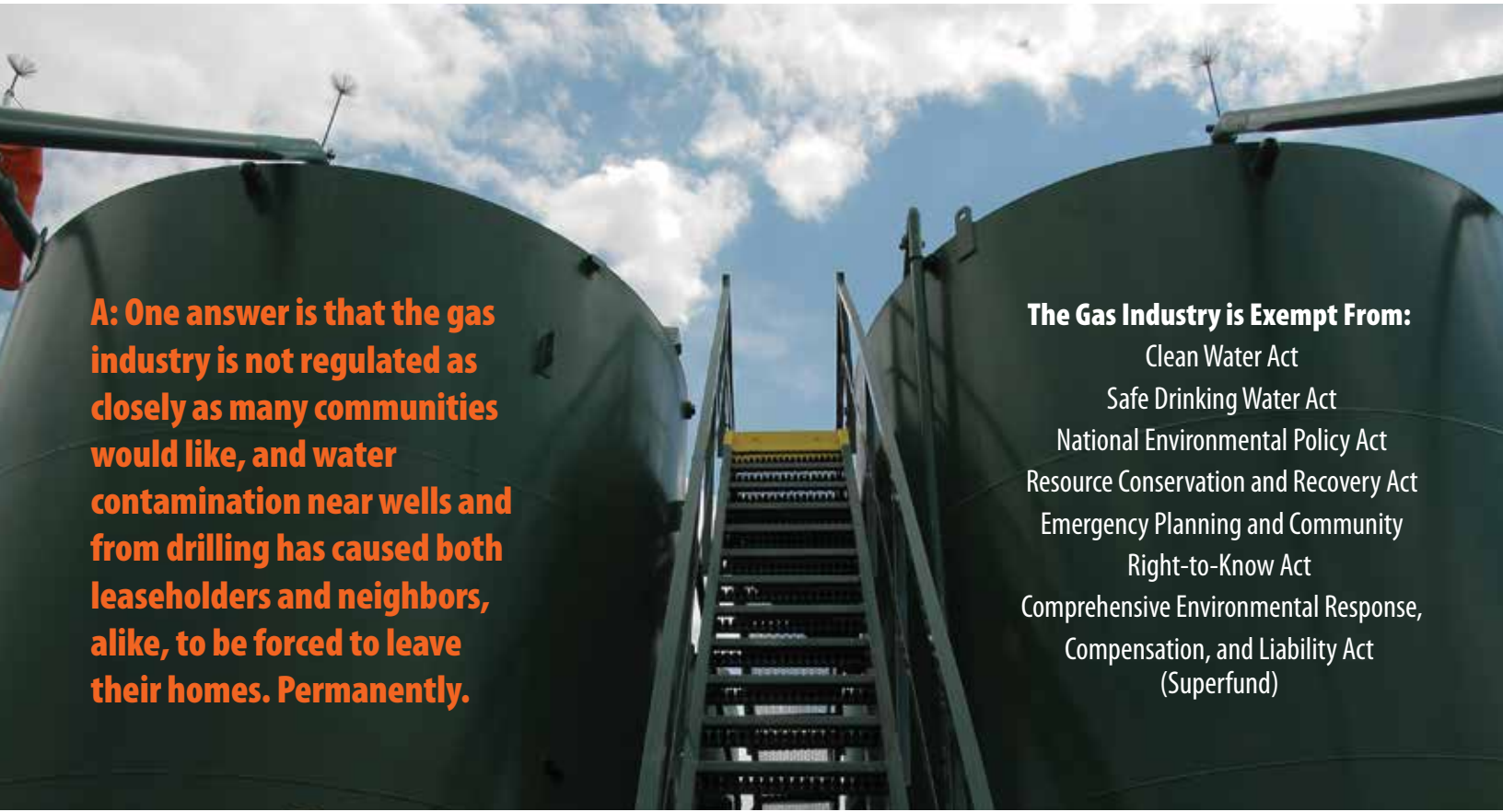
# Fracking 101

[The Not-So-Pretty Facts About Fracturing & Extracting]

**Q: How did fracking get to the top of the most “unwanted” list in American communities?**



[engagemmd.org](http://engagemmd.org)



**A: One answer is that the gas industry is not regulated as closely as many communities would like, and water contamination near wells and from drilling has caused both leaseholders and neighbors, alike, to be forced to leave their homes. Permanently.**

**The Gas Industry is Exempt From:**

- Clean Water Act
- Safe Drinking Water Act
- National Environmental Policy Act
- Resource Conservation and Recovery Act
- Emergency Planning and Community Right-to-Know Act
- Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)

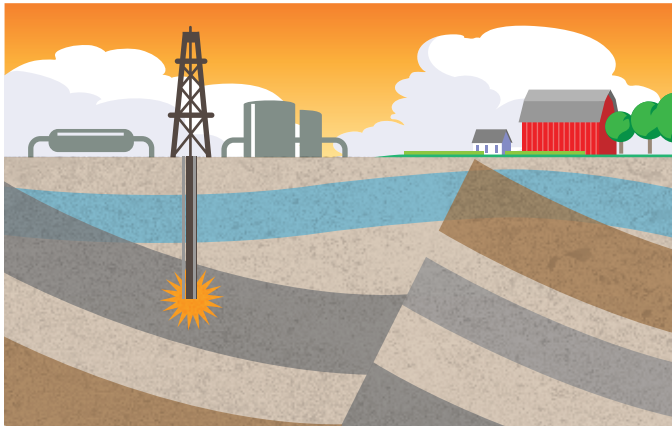
**Q: Garrett County has had conventional drilling for decades, why is fracking (*unconventional drilling*) so different?**

**A: The Marcellus Shale formation is what the industry calls “tighter,” meaning the rock holds onto the gas rather than letting it flow, so a new method was needed for mining it. Some of the chemicals used in the process are undisclosed making regulating the industry near impossible.**

**New techniques were developed** to extract gas that was not accessible in the earlier days of vertical drilling. In order to address these differences in the underground rock formations that hold the gas, massive amounts of water, chemicals, land and equipment are used at each well in order to break open the rock layers deep underground. **Because of this, the risks and impacts are much greater than older forms of gas and oil development.** By drilling horizontally, the industry can gain access to these formations by busting through less porous rock and using silica to prop open the new cracks, creating the porosity artificially.



# Comparison of Vertical and Horizontal Drilling



## Conventional Well *(vertical)*

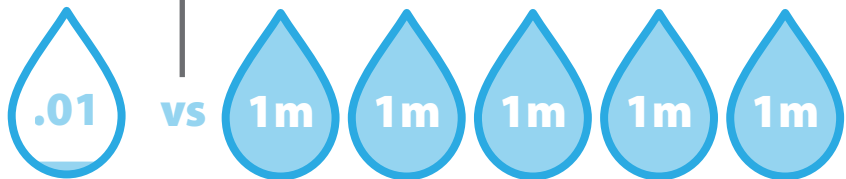
Vertical wells were usually placed in a “pool” source and product was drawn out using a straw-like method. Effects to surroundings were minimal.



## Hydraulic Fracturing *(horizontal)*

New techniques for extraction require “breaking” (fracturing) tight shale and the use of chemicals to hold open the cracks and allow the gas to be captured.

## Water Consumption Comparison



## The Gas Industry considers dealing with these issues as business as usual.

- ▶ 6.2% of all well casings fail initially. 60% fail within 20 years. Eventually, they all fail. Fracking fluids can enter the aquifers during and after drilling, contaminating neighboring water wells, making them unusable for pets, livestock, or humans.
- ▶ Between 2.5 and 8 million gallons of water are used to frack a single well. 3% of the fracking solution is toxic chemicals that makes the water unusable and dangerous.
- ▶ The emissions from fracking sites produce high volumes of methane, 86 times more potent than carbon dioxide once considered the leading culprit in climate change.
- ▶ Economic studies show the industry can hurt existing economies with tourism and recreation. Lowered property value, increases in crime, sexually transmitted diseases, and traffic accidents can be dramatic.

**Check it out> Below is the title of a paper that was presented to the Society of Petroleum Engineers at an SPE Hydraulic Fracturing Technology Conference held in February of 2012. It is a valuable educational tool and gives understandable details about how fracking is done and how the risks factor into the process and mitigation practices. Access it online ▼**

***HYDRAULIC FRACTURING 101: What Every Representative, Environmentalist, Regulator, Reporter, Investor, University Researcher, Neighbor and Engineer Should Know About Estimating Frac Risk and Improving Frac Performance in Unconventional Gas and Oil Wells.***

— George E. King, Apache Corporation  
Copyright 2012, Society of Petroleum Engineers



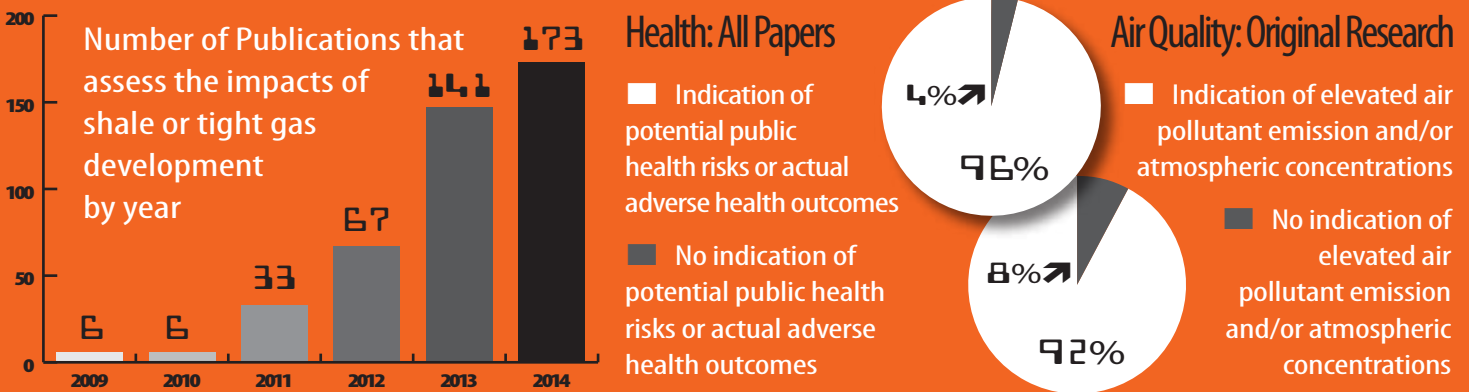
# Health Risks

[Public Health Risks And Concerns About Long-Term Exposure]



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**Q: When the 2-year moratorium became law on 5/29/15 in Maryland, it had been stripped of the “Public Health & Safety Review” and the time needed to study longer-term health effects, such as cancers. Why?**



## A: No reasonable answer yet, and the question isn't likely to go away. However...

**A recent increase in available data** exploring the dangers of fracking (2009 - 2014), illustrated in the graph above, is prompting those with concerns about air and water pollutants to look more closely at the fracking model and its safety. The pie charts give a quick analysis of overall health findings regarding “unconventional” drilling, a.k.a. horizontal fracturing. Policy-makers and those supporting the practice of extracting gas via fracking have not acknowledged some of the most current and alarming health studies, citing that research as unwarranted. Negative effects can only be measured when data is retrieved and subjects are observed over time due to the nature of disease and how it develops. Studying adverse effects on children living in actual industrial regions takes time to evaluate. This can and should be done in the interest of protecting children living in Maryland. (*see reverse*)

**Lawmakers and local representatives** can't begin to regulate the industry without the necessary, up-to-date research; and the industry will not govern *itself* in a way that will protect local communities. They should be forced to prove they can operate safely in neighboring states where fracking is already under scrutiny before being allowed into Maryland.

This idea and much of the research submitted to Maryland legislators last year was not lost on the state of New York. They proceeded to ban fracking based, in part, on the study completed for our state's leaders.

**“Would I let my family live in a community with fracking? The answer is no. I therefore cannot recommend anyone else's family to live in such a community either.”**

— Dr. Howard A. Zucker, MD, JD-Acting Commissioner of Health, New York State, 12/17/14

### The State of New York concluded:

**...the ever increasing collection of proposed mitigation measures demonstrates three essential weaknesses of the proposed (high-volume hydraulic fracturing) program:**

1. the effectiveness of the mitigation is uncertain;
2. the potential risk and impact from the proposed action to the environment & public health cannot be quantified at this time, and
3. there are some significant adverse impacts that are simply unavoidable.”

—New York Department of Environmental Conservation, Final Supplemental Generic Environmental Impact Statement, May 2015

# HAZARD EVALUATION SUMMARY

## Key Points:

TOPIC	LIKELIHOOD OF NEGATIVE PUBLIC HEALTH IMPACT
Air Quality	High
Healthcare Infrastructure	High
Occupational Health	High
Social Determinants of Health	High
Cumulative Exposures/Risks	Moderately High
Flowback & Production [Water-Related]	Moderately High
Noise	Moderately High
Earthquakes	Low

- ← Fracking initiates a multitude of mechanical and chemical changes/failures in the environment and there is enough evidence to show that the gas industry is suspect when it comes to matters of safety and making, along with abiding by health-driven policy.
- ← Research is now emerging and raising serious concerns about adverse health effects from fracking due to air (increased particulates), water (through breaching aquifers) and soil pollution (radioactive waste disposal).
- ← A January 2015 analysis of peer reviewed studies by category shows the vast majority of studies are confirming risks or adverse outcomes. (see pie charts on reverse)
- ← Potential health risks may be serious and/or irreversible; included among these are birth defects, low birth weight infants and respiratory illnesses.
- ← Cancers, developmental disorders and neurologic disease may increase in coming years.

**It will take many more years to have a full understanding all the risks involved.**



From the report "Potential Public Health Impacts of Natural Gas Development and Production In the Marcellus Shale in Western Maryland" prepared by the Maryland Institute for Applied Environmental Health, Univ. of MD School of Public Health available at [www.marcellusshalehealth.org](http://www.marcellusshalehealth.org)

## Information for Garrett County Medical Providers

On Public Health Report on Marcellus Shale Of the Maryland Institute for Applied Environmental Health (MIAEH)  
Highlights Developed by Health Advocates 9/22/14

### Hazard Evaluation Summary:

7 of 8 hazard areas assessed were ranked as High or Moderately **High Likelihood of Negative Public Health Impacts** (Table 6-1, Hazard Evaluation Summary, p. xx). Studies evaluating health outcomes are just starting to come out, with most being published since 2013; several key studies were released after the MIAEH report. Industry non-disclosure agreements have impaired health research. In addition, many providers are prioritizing direct patient care for those affected by unconventional gas development and simply do not have time to write journal articles that will take years to get published.

### Best Management Practices not based on Research on Health Impacts:

Health hazards will be observed even if proposed Best Management Practices are implemented by regulators. Many recommendations lack research support.

- **SETBACKS** are not supported by research – safe distances from wells and compressor stations have not been demonstrated empirically. Evidence of safety is needed.
- **Chemical Disclosure:** MIAEH proposed full chemical disclosure (page 89): "Implement the provisions of H. B. 1030 for timely access to disclosed information by medical professionals, emergency responders, poison control centers, local officials, scientists and the public." This recommendation exceeds MDE's recommended Best Practice; however, telling people what they've been exposed to is not the same as preventing exposure.

**Local Costs:** MIAEH makes many recommendations to involve local citizens, health care providers and/or county health departments to ensure the health and safety of citizens and workers; however, suggested funding mechanisms or leadership for implementation is not specified. (pgs. 88-99).

- Recommended that local health care providers participate in identifying and preparing for impacts to the healthcare infrastructure (p.97), thus further taxing providers in these Health Professional Shortage and Medically Underserved Areas.
- Did not quantify the costs to local government and health institutions of needed capacity to handle traffic accidents, pipeline leaks, chemical spills, explosions, worker injuries, resident health problems, domestic violence and increased sexually transmitted diseases. The state-funded economic study also did not address these costs.
- MIAEH does not address Garrett County's capacity for emergency response (e.g., all volunteer fire departments, relies on Allegany County's HAZMAT team).

### Water Contamination:

MIAEH listed air contamination as a greater risk to public health than water contamination due solely to a relative lack of research on water contamination.

- PA-DEP found residential well contamination of VOCs, ethylene glycol and 2-butoxyethanol among 243 cases of contaminated residential water wells; PA-DEP records were released 8/28/14 AFTER MIAEH report
- Dr. Ingraffea's 2014 data suggest unconventional GAS wells show a 6x higher incidence of cement and/or casing failures compared to conventional wells. Unconventional wells drilled in the NE PA region since 2009 (2,714 wells) show a high failure rate – 9.18%. Rates go up over time as wells age. failure of gas well integrity poses a significant risk to drinking water supplies.



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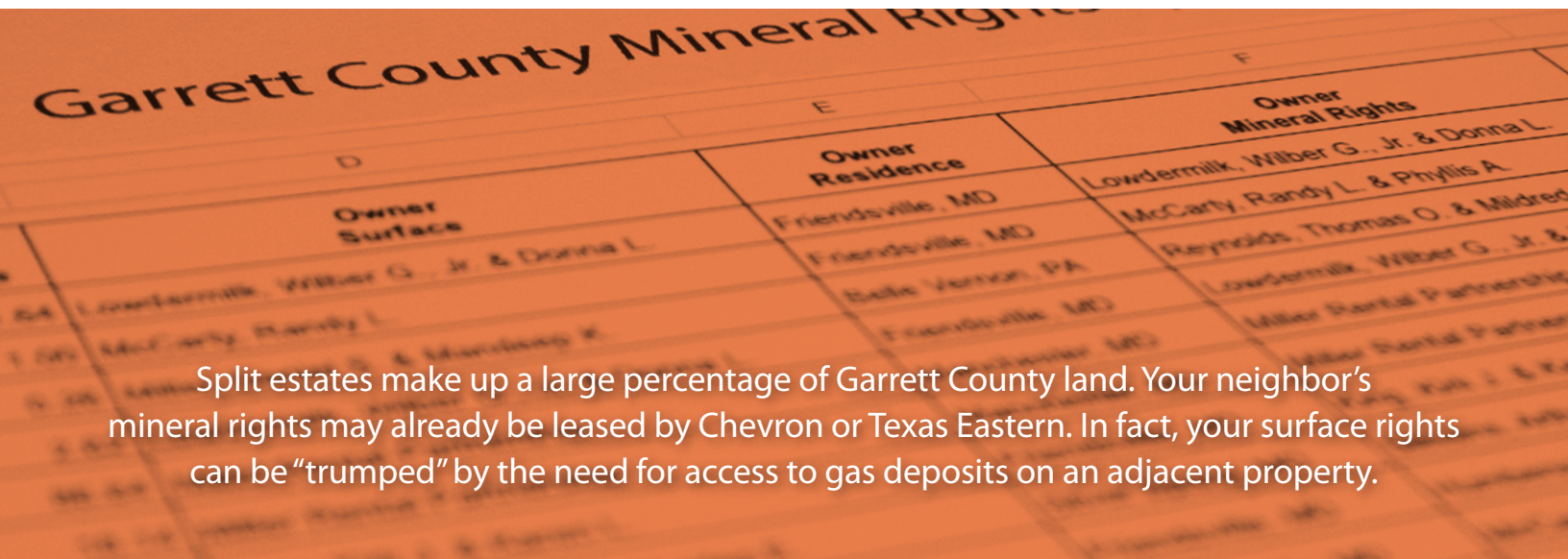
# Land Rights

[Split eastates | Surface vs. Mineral]



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**Q: Do you own your mineral rights or just the surface of your property? Do you know how your neighbors land rights can affect you?**



Split estates make up a large percentage of Garrett County land. Your neighbor's mineral rights may already be leased by Chevron or Texas Eastern. In fact, your surface rights can be "trumped" by the need for access to gas deposits on an adjacent property.

**A: If you want to know if you own the minerals under your land, or find out who does, stop by the county clerk's office at the county courthouse. Records pertaining to land rights are filed and archived there.**

You can assemble a "chain of title" from these records by seeing documents that record the ownership of mineral rights as they have changed hands (or not) over time. This may be quite straightforward, depending on the specifics of transfers and conveyances, or in some cases an attorney is helpful if the chain of title is complicated.

**To find out who owns the mineral rights *AROUND* your land, here's an interactive map of Garrett County that shows the leases still in effect, as well as expired leases.**

*The moratorium has delayed permitting, but new leases will be negotiated in anticipation of the moratorium's expiration in 10/2017.*

This map also illustrates the gas industry presence in West Virginia. Fracking in Pennsylvania is wide-spread, but is not represented.

Go to > <http://www.arcgis.com/apps/Viewer/index.html?appid=fe9fae9fff904583bd49b2beea5d7fea> ▶ ▶ ▶ ▶ ▶



## What is mineral property?

Mineral property is real property that can have several different forms. Mineral property includes hydrocarbons (oil, gas and coal); hardrock minerals (gold, silver, copper, and other metals); and other types of minerals (talc, bentonite, uranium and others).



## Why is mineral property important?

When minerals are developed, the owners of the mineral property stand to benefit. Others who do not own the minerals, such as surface owners or neighbors, are not likely to directly gain. While surface owners or neighbors may be able to profit from mineral development by supplying other supporting services, the value of the minerals will be collected by the owner and developer. Conflict between mineral owners and non-mineral owners can arise with any type of mineral. There can also be conflicts between mineral owners.

Sedentary minerals like metals and coal do not move below the surface. While there have been disputes about neighboring rights in hardrock minerals (for example intersecting mine shafts), such problems are fairly straightforward to resolve. Mineral records are complicated and it may take intensive research to establish title, but minerals are real property and therefore similar to real estate.

Unlike metals or coal, in some formations oil and natural gas can migrate under the surface. As oil or gas is extracted it becomes personal property with ownership defined by the “rule of capture”. A person can own the oil and gas by extracting it, even if the source was another person’s mineral property.

*(Rule of capture: When resources can move, ownership of the products is established when they are “captured,” as when oil is pumped to the surface. This rule creates personal property from real property.)*

## What types (legal) of mineral property are there?

There are several types of mineral property. Every mineral owner needs to know what type of property he or she owns. The following sections outline types of mineral property.

### **Unified Estate**

The simplest way to think about mineral property is when it is owned along with the surface by one person. This is sometimes called “fee simple” or unified tenure. This is ownership of 100 percent of both the minerals and surface real property on the same piece of land. The mineral and surface rights are held together.

### **Severed or Split Estate**

Mineral ownership can be separate from surface ownership. The term for this situation is severed minerals; when mineral ownership is severed, it is called a split estate. Severed minerals originate in two ways. In many cases, the federal government reserved (did not grant) minerals in initial homestead claims. Later homestead claims, especially after 1916, often reserved minerals. Those reserved minerals are mostly owned by the federal government, with leasing administered by Bureau of Land Management (BLM).

The other way minerals can become severed is if an owner decides to split the estate into a surface interest and a mineral interest. This is sometimes done when property is passed down between generations. Other times owners choose to sell the minerals to another person – it can be a relative or a stranger. In some cases, railroad grant lands were resold to private individuals without the mineral rights. Today, much of that mineral acreage is owned by corporations.

## Does owning mineral property entitle me to benefit from mineral development?

As a mineral owner, you could benefit from development of your minerals. However, in almost all cases a contract (mineral lease) pertaining to mineral development is written that will be instrumental in determining how much compensation you receive.

### **Title Searches & Landmen**

If you don’t have the time, interest or patience to investigate your mineral property, you can hire an attorney or a title company to make a search for you. You can also hire a professional with expertise in researching mineral titles. These professionals are called landmen. Many landmen work for oil and gas companies, but you can find an independent landman and hire them to research your mineral property for you. The cost of a mineral search is typically higher than a standard title search for surface title, in part because of the complicated nature of mineral records.



# Property Values

[Fracking | Real Estate & Insurance]

**Q: Will the sales value of homes in the vicinity of fracking be affected by nearby gas wells during and after drilling occurs?**



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**A: Studies show that homes within close proximity to gas wells experience 20% or more devaluation in sales value. This negative effect is driven by the stigma created by water well contamination issues.**

**Other things, in addition to this stigma, can decrease property values. Noise, dust and traffic during well construction, road damage, and physical changes in the landscape can all negatively impact property values in communities identified with fracking.**

## The Effects of Natural Gas Development on Real Property Values

House of Delegates – Environment and Transportation Committee

January 29, 2015

The development of natural gas resources in the United States brings with it certain negative economic effects that must be considered when adopting public policy. In addition to its unreliable boom-bust character, there is growing evidence that shale gas development can actually hurt some very important sectors of local rural economies. Several recent academic studies show that homes located within 1km to 1.5km (.9 mile) of a gas well experience an overall reduction in property values as high as -10% to -22%, or more.

Two recent and very comprehensive studies<sup>1</sup>, Muehlenbachs, et al (2013) and Throupe, et al (2013), utilized data driven analyses of actual property transactions and their spatial relationship to natural gas wells. Muehlenbachs et al is especially relevant because it contains data from the Marcellus Shale region. Both of these studies are available for comment and peer review and are considered reliable. →

→ **The negative effect on residential property values is experienced on rural homes that depend on wells as their drinking water source.** Almost all rural homes in Garrett County outside of its small towns have private water wells.

→ **The effect is driven by the negative stigma associated with fracking and its impact on water resources.** This negative stigma will probably get worse as the evidence of air emissions and public health impacts are better known.

→ Some argue that the property value can be mitigated by the property owner selling their gas. **Muehlenbachs et al reported that the value of royalty receipts does not fully recoup the loss of property value.** There remains a net loss. (note: there is also evidence that only a small amount of royalty receipts are invested back into the local economy<sup>2</sup>.)

→ Garrett County's property tax base is very dependent on second/vacation homes found mostly in the Deep Creek Lake area. **The Deep Creek Lake watershed represents 9.7% of the total acreage of Garrett County. However, it provides approximately 60% of the county real property tax base.** Fracking in and near the lake resort threatens both tourism and the county's tax base. **A reduction in property values from fracking in and near this one watershed can seriously impact local revenue sources while also lessening the appeal of Deep Creek Lake to tourists, future property buyers and new home construction.**

→ The Maryland Dept. of the Environment predicts that approximately 75 gas well pads will eventually be placed in Garrett County. This means that more than 190 square miles of private property will be negatively impacted in the sacrifice zones around these wells. With an average real property tax value of \$61,000+/sq. mile in Garrett County, as much as 28.9% of the county's tax base could be affected. **This could result in annual tax revenue losses or more than \$10 million, or more.**

**Other reports from the Marcellus Shale play indicate that people have experienced problems with rental rates, mortgages, homeowners insurance, royalty payment calculations, contractor liens and controversies about impacts of well pad equipment on the use and enjoyment of one's property.**

1. Muehlenbachs, Spiller, and Timmons, *The Housing Market Impacts of Shale Gas Development*, (Resources for the Future, Washington DC, December 2013)

Throupe, Ron; Simons, Robert A.; and Mao, Xue, "A Review of Hydro "Fracking" and its Potential Effects on Real Estate" (*Journal of Real Estate Literature*, Volume 21, Number 2, December 2013)

2. Kelsey, Shields, Ladlee, Ward, Brundage, Michael and Murphy, *Economic Impacts of Marcellus Shale in Tioga County: Employment and Income in 2010*, (Penn State Extension and Penn College 2012).

## How Can Drilling Affect Your Home Mortgage?

**LENDINGTREE | Online Mortgage Advice | Gerard Anthony | November 27, 2013**

Whether you are on the side of the energy producers or the environmentalists, there is one thing you should know about how fracking can affect you personally - it might cause your mortgage to be invalidated and prevent you from getting a mortgage in the future.

### **HOMEOWNERS ARE AFFECTED IN A NUMBER OF WAYS:**

- 1. It may violate the terms of your current mortgage. |**
- 2. It may complicate the future sale of your home.**
- 3. It may prevent you from refinancing. |**
- 4. It may keep you from getting a home equity loan.**

## Can Fracking Affect Your Homeowners Insurance Coverage?

As with securing a mortgage, the risks associated with fracking (earthquakes, methane buildup, etc.) can be serious and all homeowners policies exclude damage from environmental contamination. Major insurers like Nationwide have made statements that a policy that's *written for* earthquake coverage will pay out, even if there's a fire or explosion. But you must already have that coverage and live **near** the fracking site. A homeowner who **leases** their land forfeits the homeowner status and must rely on the gas company to accept any liability should it arise as they are, in effect, a business.

More info> Source: [PROPERTYCASUALTY360.com](http://PROPERTYCASUALTY360.com)