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The Nuances of Mineral Rights

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INTRODUCTION

Few environmental concerns have been as contentious fracking. While this process has produced a boom in America's production of natural gas, many people are wary of potential pollution of waterways and airways and the health implications that can come with fracking. Despite people's reservations about fracking, some Americans who live in areas rich with shale and natural gas have no option but to become intimately connected to fracking. Through a complicated web of property ownership, many American lives are affected by fracking, whether they want it or not.

Unlike most other countries, American property owners can own everything that lies above, beneath, or on a piece of property. Over time, the rights to these different levels of resources could have been sold or leased to varying parties ("Mineral Rights"). Occasionally, potential property purchasers can be under the impression that they will own the mineral rights under the property they are buying, when, in fact, those mineral rights belong to a third party. This can greatly impact a property owner's life; it can result in them having no say in whether their property is the site of a fracking well, leaving them to deal with any adverse effects of drilling without reaping any benefits.

Those in favor of fracking argue that the potential pollution and health problems have been over-exaggerated. They say that explosion of the natural gas industry has brought down energy prices domestically and has lessened our energy dependence on other countries. Pennsylvania has been a hotbed of fracking controversy thanks to the Marcellus Shale development and Josh Fox's award-winning documentary *Gasland*. Thus, average citizen, including students of Lehigh University, should pay close attention to fracking and the nuances surrounding it. Through education, citizens become better equipped to advocate for their best interests. Education is especially important when discussing mineral rights as they pertain to fracking, because these mineral rights are largely misunderstood and not discussed. This has confused many property owners who may have thought they owned the mineral rights for their property, when they really didn't. I will look to the history of land and mineral rights, how they can be sold or leased, the complications that can arise, and how they are used in fracking.

THE HISTORY OF LAND AND MINERAL RIGHTS

The American relationship with the land has evolved dramatically since pre-colonial times to present day. Prior to contact with the Europeans, Native American tribes had loose territorial boundaries; however, many Native American cultures didn't contain the notion of land ownership. This changed when the Spanish, French, and English began colonizing and exploiting the New World. Across the board, these Europeans began taking the land from Native Americans, drawing upon the European ideas that land was worth more when bound and developed by man. Throughout the colonial period and the first hundred years of the United States of America, Europeans and their descendants

privatized Native American lands at an astounding rate, erasing the idea of a frontier by 1890 (Merchant, 1993).

By the end of the 19th century, the U.S. government had seized the vast majority land that had been held in common by Native American tribes. The U.S. government then redistributed some of this land as smaller, individual parcels through Congressional acts, such as the Homestead Act of 1862. The Homestead Act gave parcels of 160 acres to adults who either were citizens or had intentions of becoming citizens, on the promise that they lived on and improved the land through habitation and cultivation, for five years. After the five years, the person who had occupied the land owned it, free and clear, after paying a small administrative fee (Homestead Act, 1862). Much of the other land was used for resource development to support the rapid industrialization of American society (Kline, 1997).

Unlike most other countries around the world, the United States was founded on a strong foundation of individual rights, which has complicated American property rights. Property bought and sold in America can include the rights to any resource on that property: mineral rights, air rights, timber rights, riparian rights, and surface rights, for example. When these are bought together, this is called a fee simple estate ("Mineral Rights"). If a fee simple estate has been broken up, the estate is then known as a severed estate.

Figure 1. This figure provides a visual representation of the variety of rights a property owner can own. If these are all owned together, the estate is referred to as a "fee-simple estate". Retrieved from: <http://people.uwec.edu/ivogeler/w270/bundleofrights.htm>

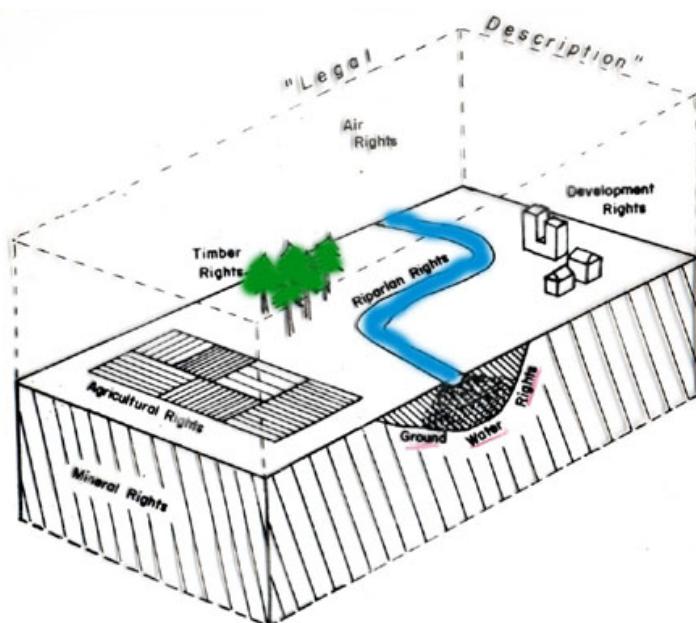


Figure 1. The Geography of Legal Rights in Land: Elements of Property Ownership

Over the past 150 years, as the viability of mineral resources became more and more apparent, American property owners began selling or leasing their mineral rights separately from other parts of their estate. The ability to sever other parts of the property from the minerals lying under the surface, temporarily through a lease, or permanently through a sale, has created a complicated web of land and resource ownership in America today.

HOW MINERAL RIGHTS ARE SOLD OR LEASED

When mineral rights are sold, they can then be re-sold time and time again, over generations. At any point, the owner of the mineral rights will have “a right to exploit the property” (“Mineral Rights”), leaving the seller or any future surface owners to deal with the consequences of mineral exploitation. When mineral rights are sold, they can “involve all mineral commodities (known or unknown) that exist beneath the property, or, the transaction can be limited to a specific mineral commodity (such as “all coal”) or even a specific rock unit (such as the “Pittsburgh Coal”)” (“Mineral Rights”). Whoever owns the mineral rights also has a right “to enter the property and remove the resource at some future time” (“Mineral Rights”). The initial property owners who sold the mineral rights will receive some compensation for the sale; however, they may not necessarily be the one to deal with the consequences. Future landowners, at any time, may be subject to increased noise pollution, truck traffic, or other industrial development that is associated with mineral exploitation or extraction.

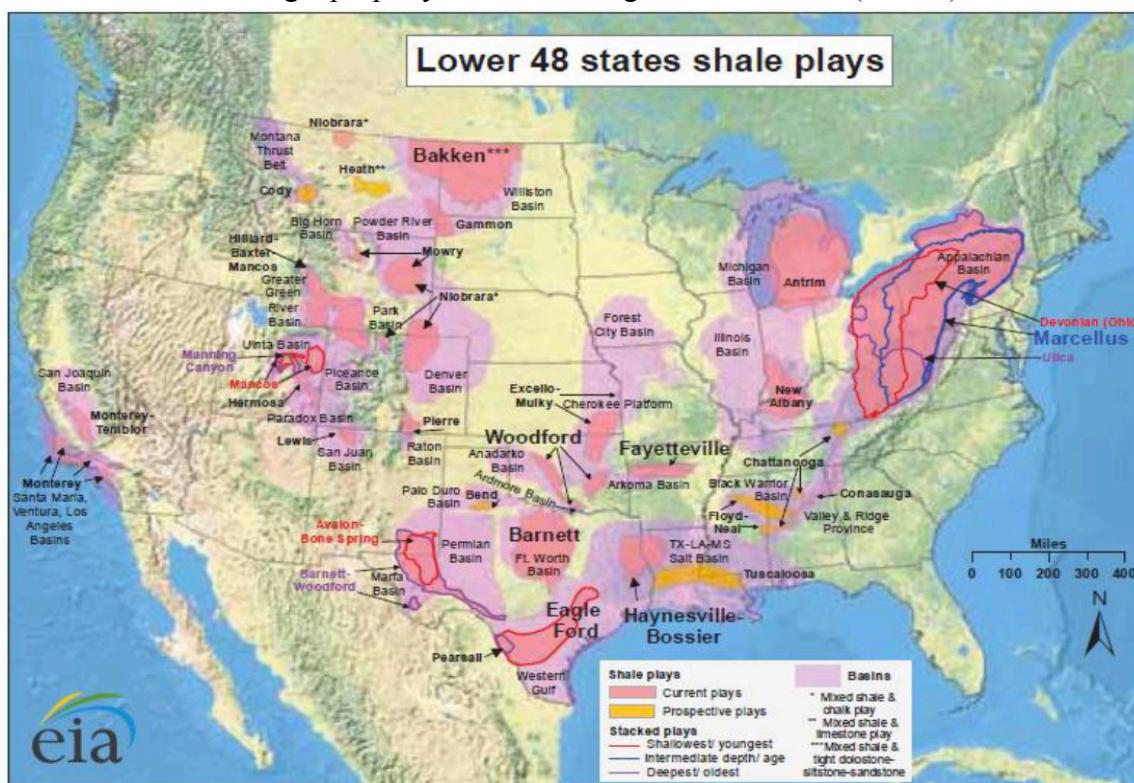
The owner of the mineral rights also has the ability to lease them out at any time. Leases typically occur when the company looking to exploit the minerals is unsure of what kind, how much, and the quality of any minerals that lie underground (“Mineral Rights”). Typically, a mineral company pays an upfront fee to the owner of the mineral rights to conduct tests (“Mineral Rights”). This upfront fee can be thousands of dollars per acre leased, paid to the owner of the mineral rights. Oftentimes, the property in question is rural, meaning that landowners can own hundreds or thousands of acres. This can translate into an initial payment of hundreds of thousands of dollars, or more. The tests conducted determine if any subterranean mineral deposits exist, how much of the mineral exists, and the quality of the mineral. In the case of oil or natural gas, if resources are found and drilling commences, the mineral rights owner typically also gets royalty payments, ranging from 12.5 to 25 percent of the oil or natural gas value at the wellhead. For property owners above the Marcellus Shale and other shale deposits, sometimes it can be hard to say no to the wealth that lies just below the surface (“Mineral Rights”).

COMPLICATIONS IN LAND OWNERSHIP

In theory, any fees or royalty payments collected by property owners are intended to help offset any adverse effects that arise from mineral extraction. Despite this intention, the complicated web of landownership and mineral rights often means that this isn’t the case.

Some homebuilders in America hold onto the mineral rights under their developments without disclosing this to the homebuyers. D.R. Horton, for example, is one of the largest homebuilders in America. They buy large stretches of land, develop it into subdivisions, and then sell the houses they've built. A special report by *Reuters* found that D.R. Horton has "separated the mineral rights from tens of thousands of homes in the states where shale plays are either well under way or possible" (Conlin). In most states, the sellers, like D.R. Horton, "aren't legally required to disclose to home buyers whether they are severing the mineral rights to a property" (Conlin). Oftentimes, property owners can be unaware that they don't own the mineral rights underneath their homes.

This can have disastrous implications for the homeowners, as it can impact many aspects of property and home ownership. Some of the largest mortgage lenders in the country, such as Wells Fargo, "sometimes den[y] mortgages to homes encumbered by gas leases" (Conlin). Other mortgage lenders across the country have added a clause to their mortgages, allowing them to "declare borrowers in default in any part of the subsurface property has been 'leased, assigned or otherwise transferred for use to extract minerals, oil or gas'" (Conlin). Some mortgage lenders, such as Sovereign Bank, won't "move forward with financing a property...if mineral rights are severed" (Conlin).



Source: U.S. Energy Information Administration

Figure 2. This figure highlights areas of the country that are affected by fracking and have seen impacts on local mortgages. Retrieved from: <http://www.valuewalk.com/wp-content/uploads/2015/11/Real-Estate-Value-Impacts-From-Fracking-1.jpg>

The Attorney General's office in the state of North Carolina issued a report in 2012 entitled, "North Carolina Oil and Gas Study under Session Law 2011-276: Impacts on Landowners and Consumer Protection Issues." While this report came to many conclusions, it found that homebuyers in North Carolina might assume that when they buy their property, they buy access to all the resources on, above, or below it as well. While a homebuyer's lender "will require a title search which should disclose any defects or limitations to the title, including a mineral rights deed...the title search information may not be provided to the buyer until closing." This information may be revealed so late in the process that the homebuyer is unable to back out of buying the property.

If the mineral rights under the property are leased, it could affect the property owner's ability to obtain a mortgage, refinance an existing mortgage, or obtain new credit. The property owners may be in violation of some clauses within their mortgage, which may put them at risk of foreclosure. As per the *due-on-sale* clause, if the mineral rights under a property are leased without the permission of the mortgage lender, it "could be considered an act of default under the mortgage" ("North Carolina Oil and Gas Study under Session Law 2001-276: Impacts on Landowners and Consumer Protection Issues").

Another common mortgage clause is the *hazardous substances clause*, which "prohibit[s] the borrower from allowing...the use or storage of hazardous substances beyond those used in normal residential activities" ("North Carolina Oil and Gas Study under Session Law 2001-276: Impacts on Landowners and Consumer Protection Issues"). Often, the presence of the chemical substances involved in fracking on a property can violate this clause and put the property owner at risk of defaulting their mortgage. Once again, when property owners don't own the mineral rights, their mortgage could be at risk due to someone else's decision.

Mortgage lenders don't want to lend to owners of severed estates for several reasons. One reason is because oftentimes the fear of pollution associated with fracking can crash local property values, and they don't want to be responsible for a potentially contaminated property that would be difficult to sell. A study published by Resources for the Future, an "independent, nonpartisan organization that conducts rigorous economic research and analysis" ("About RFF"), found that housing properties generally lose value when they are located close to fracking wells. While the loss can be partially made up by royalties paid to the mineral right owner, it doesn't include the costs associated with installing water filtration systems for homes that use well water. When all is accounted for, the study found that within 1.5 kilometers of a fracking well, a property that relies on well water loses 10 percent in property value. Within one kilometer of a well, homeowners who use well water lose 22 percent in property value. Properties who get their water from public water don't see any losses in property value, although their property doesn't gain value either (Muehlenbachs). The study found, that across the board, any positive values associated with fracking, such as royalties made, are quickly wiped out by the negative externalities, such as noise and light pollution or increased truck traffic, associated with having a fracking wellhead nearby.

HOW MINERAL RIGHTS ARE USED IN FRACKING

When a shale company comes to actually extract the gas from lands they've leased, it can also cause problems. According to the Susquehanna River Basin Commission, fracking wells utilizing contemporary horizontal fracking techniques can drain liquid natural gas from 200-400 acres surrounding a single well pad ("Gas Well Drilling and Development Marcellus Shale"). A legal concept, the "rule of capture," "states that there is no liability for drainage of oil and gas from under the lands of another so long as there has been no trespass and the individual observes all relevant statutes and regulation" ("Laws in Pennsylvania pertaining to Pooling/Unitization, Rule of Capture and Well Spacing"). If a fee simple estate owner does not want to lease his or her land and is holding out, and does not lease the mineral rights to a fracking company even though all their surrounding neighbors have, the natural gas under the land can still be fracked, so long as the wellhead is placed on a neighbor's property. By the rule of capture, the holdout is generally not entitled to compensation from the collection and sale of the natural gas underneath their property, because it is difficult to prove exactly whose property produced the natural gas (Pifer).

Another legal tool, called "forced pooling" can force holdouts to lease their mineral rights. While the details vary from state to state, forced pooling generally allows natural gas companies to "extract minerals from a large area or "pool"—in most states a minimum of 640 acres—if leases have been negotiated for a certain percentage of that land" (Baca). Unlike the rule of capture, if forced pooling is used, each mineral rights owner is entitled to a proportion of the royalties equivalent to the proportion of their acreage leased. Forced pooling can lead to a more efficient fracking operation, as it views all the properties above a mineral deposit as accessible, and thus can place wells at the most efficient sites. In Pennsylvania, forced pooling is governed by an uncertain law from 1961, and has not been used in the current fracking boom due to its uncertainties (Legere). At least 39 states have some kind of forced pooling law on the books. A 2011 article by *ProPublica* highlighted Joseph Todd, a man from upstate New York, whose "half-acre property...[became] part of a drilling unit [in 2009]" (Baca). When his well water became contaminated with methane, he and some of his neighbors sued the shale company who ran the well (Baca). After more than three years, U.S. District Judge Charles Siragusa decided against Joseph Todd and his neighbors, stating that they had "failed to prove the silt and methane that befouled their water was caused by...[the nearby gas wells]" (Esch). Oftentimes, property owners have little recourse outside of the courts when dealing with property right issues and fracking.

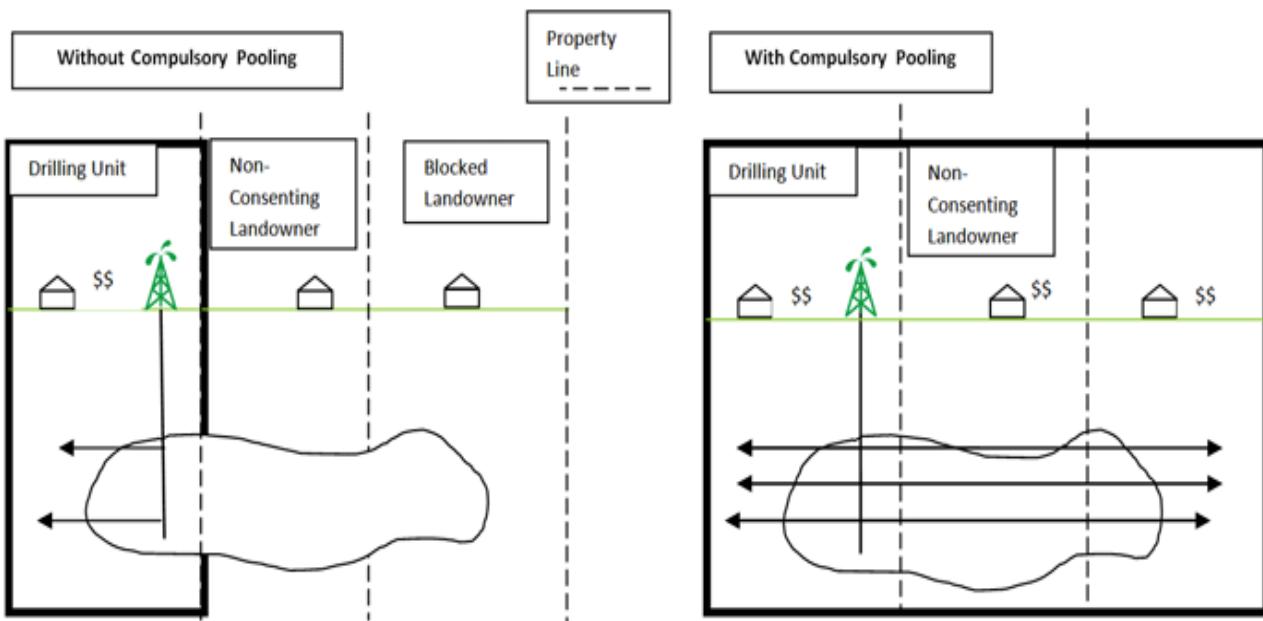


Figure 3. This illustrates the notion of forced, or compulsory, pooling. In left half of this diagram, where forced pooling does not exist, the fracking well can retrieve all of the liquid natural gas below the three properties, but only one property owner (the furthest left) is the only one who is making money. The right half of the diagram shows that, in instances of forced pooling, all three property owners are making money. Retrieved from: <http://www.ncsl.org/research/energy/compulsory-pooling-laws-protecting-the-conflicting-rights-of-neighboring-landowners.aspx>

The burden of proof falls on the property owners, making it so they have to prove that there is a qualitative difference in their water because of fracking. The decision in Joseph Todd's case is similar to a lot of other cases across the country. A quick Google search reveals that hundreds of similar cases that have been filed against shale companies, alleging contamination of water, air and impacts on human health. Most of these cases are settled out of court, and the plaintiffs are required to sign non-disclosure agreements, which limit the public discourse about fracking and its impacts. This, combined with the nuances and complexity of American property ownership and mineral rights, make it difficult to have a frank and honest discussion about fracking. This is problematic because it further isolates people who feel violated by natural gas companies, and it helps to perpetuate the uncertainties and complexities that encompass mineral rights and property ownership.

SHORT PROFILES OF IMPORTANT PLAYERS

There are many involved parties when dealing with mineral rights. Besides the property owners themselves, there are also concerned citizen groups, attorneys, the Pennsylvania Department of Environmental Protection, environmental groups, and landmen. Each of these players approaches the issue of mineral rights from a different perspective.

Concerned Citizens Groups

Concerned citizens groups are a great resource for people whose mineral rights may have been affected by fracking. Some groups, such as “Denton Drilling Awareness Group,” from Denton, Texas, have particularly large online presences. These groups are important for citizens, as they can both provide information and support for them. If local citizens have decided to sue a shale company for any transgression or lease violation, these groups can unite citizens who might otherwise feel isolated in the daunting case of challenging such a corporation.

The Denton Drilling Awareness Group’s website, frackfreedenton.com, has a plethora of information, including scientific studies, links to government sites, and information about the location of local well sites. They are a nonprofit, aimed at “educating the public about the dangers of gas well drilling and its related processes to the public health, the environment, and property values in the city of Denton” ([frackfreedenton.com](mailto:frackfreedenton@gmail.com)). They can be contacted through the email frackfreedenton@gmail.com, or can be reached on Facebook, at Frack Free Denton, or on Twitter, @frackfreedenton.

Attorneys

A very important person that should be involved in any legal negotiations is an attorney. An attorney will be able to help prospective property purchasers conduct a title search, to discover whether they are also purchasing the mineral rights. Additionally, if property owners do own the mineral rights and decide to lease them at any time, an attorney will be able to assist in negotiating that lease, making sure that the property owners are comfortable with the rights they are giving up and the compensation they will receive.

To forego the hiring of an attorney at any point could result in unintended damages suffered by the property owner. The search for an attorney is a personal one that is dependent on many factors. A simple Google search may turns up dozens of options for a single area. One example is Attorney Tate Kunkle of New York City law firm, Napoli Bern Ripka Shkolnik & Associates, who has worked with Pennsylvania families in the past in cases about fracking and ground water contamination (Rubinkam). Their office is in the Empire State Building, and they can be reached at 1-212-267-3700.

Pennsylvania Department of Environmental Protection

The Pennsylvania Department of Environmental Protection, or DEP, is another influential player locally. In potential cases of pollution, the DEP can prove to be an invaluable resource. The DEP has a toll-free number, as well as several regional offices that can assist in registering any environmental complaints. If property owners see something that does not seem right, environmental complaints on record can help in cases of future litigation.

The toll-free number is 1-888-723-3721. The regional offices are separated into six regions: the Northcentral Region; the Northeast Region; the Northwest Region; the Southcentral Region; the Southeast Region; and the Southwest Region. A complete list of the counties that comprise each region can be found at this link:

<http://www.dep.pa.gov/About/ReportanIncident/Pages/EnvironmentalComplaints.aspx#.VmQY-ODGko>.

Environmental Advocacy Groups

Environmental advocacy groups can be hugely important as well. Similar to concerned citizen groups, they can help to unite people who are experiencing similar things. However, often these environmental advocacy groups have a larger pool of resources than concerned citizen groups, and thus can have a larger influence.

Earthworks, for instance, is a non-profit “dedicated to protecting communities and the environment from the adverse impacts of mineral and energy development while promoting sustainable solutions” (EARTHWORKS). They have a Facebook, EARTHWORKS, a Twitter, @Earthworks, a website, earthworksaction.org, and an office in Washington, D.C. where they can be reached at 1-202-887-1872.

Landmen

For those property owners who may be interested in leasing their mineral rights to a shale company, they will need to get in touch with a landman. A landman is an industry representative employed to negotiate leases. Many landmen are enthusiastic about their work, and thus, they have likely approached a vast majority of properties on well-known shale plays, such as the Marcellus Shale.

The American Association of Professional Landmen (AAPL) is a “professional association of the landman industry,” which aims to promote protection of the public trust, as well as “promote sound stewardship of energy and mineral resources” (Frequently Asked Questions). The AAPL is based in Texas can be reached at 817-847-7700.

MORE INFORMATION

Center for Agricultural and Shale Law, Penn State University Park Law School

The Center for Agricultural and Shale Law in Penn State’s University Park Law School is a resource that “provides agricultural and shale law research and information with a specific focus on those issues of importance in Pennsylvania.” Its aim is to provide general information for a variety of stakeholders. This page provides a collection of resources, including various regulations from multiple states involving increased seismicity due to fracking. The information on this page is somewhat limited, although it is not biased. <https://pennstatelaw.psu.edu/academics/research-centers/center-agricultural-and-shale-law>

National Public Radio State Impact

National Public Radio's reporting project, State Impact, aims to present nonbiased journalism reports about fracking. Its coverage is very in-depth, varied, and current. It also focuses on more than purely fracking, discussing related issues such as climate change or local rent prices. This website is very easy to use. State Impact is written and produced by two journalists, Marie Cusick and Susan Phillips. This allows for in-depth, knowledgeable coverage while offering different perspectives.
<https://stateimpact.npr.org/pennsylvania/>

Marcellus Shale Coalition

Marcellus Shale Coalition is a pro-fracking group that aims to educate and inform “policymakers, regulators, media, and other public stakeholders” about Marcellus and Utica Shale development. The website offers a wide variety of information, from press releases, to information about shale development from leasing to site restoration, and transportation and infrastructure. The site is easy to use, although it is biased, as the Marcellus Shale Coalition works to encourage the development of the Marcellus Shale and the Utica Shale. <http://marcelluscoalition.org/>

The Berks Gas Truth

The Berks Gas Truth is a counterpart to the Marcellus Shale Coalition. They aim to stop “unconventional natural gas drilling,” and have a variety of information on their page about the harms of shale development. This site may be overwhelming simply due to how much information they have displayed, and it is biased towards anti-fracking interests. It offers concerned citizens channels through which they could get involved in speaking out against shale development. <http://www.gastruth.org/>

Environmental Protection Agency

This is the official webpage published by the United States Environmental Protection Agency on hydraulic fracturing. It is easy to use and provides readers with a lot of information about shale development and its different effects. On the right side is a bar that provides links to recent government assessments and other news the EPA has published. There are also links to related information, such as the process of hydraulic fracturing and the radioactive wastes produced by oil and gas drilling. This is a government site and provides objective information.
<http://www.epa.gov/hydraulicfracturing>

Insideclimate News

Insideclimate News offers in-depth, investigative articles on fracking, as well as other issues. Their articles tend to advocate for environmental progress, and thus they are a bit biased. They have hundreds of articles about different issues related to shale gas development, and thus offer in-depth insight that is difficult to find through other sources.
<http://insideclimatenews.org/topics>

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