

A West Virginia Forestland Owner's Guide to Natural Gas Development

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The booming natural gas industry affects forestland physically and aesthetically. Planning and preparing for these impacts will allow you as a landowner to influence natural gas exploration on your property in a way that may more closely match your own objectives. Educating yourself about the natural gas industry and assuring that your forest management plans are up-to-date are ways you can help maintain environmentally healthy forestlands in West Virginia for this and future generations.

Natural gas exploration in West Virginia

According to the West Virginia Geological and Economic Survey, oil and natural gas were discovered by the first explorers in western Virginia (now West Virginia) in the mid-1700s. It was of such interest that George Washington acquired 250 acres of land in the area in 1771 because it contained an oil and gas spring. In the early 1800s, oil and gas were a nuisance for salt makers who drilled wells to extract brine. It wasn't until the mid-1800s when oil and gas were used for heating, light, and lubricants in manufacturing that the importance of the industry was realized. As the demand for oil and gas increased, the industry rapidly spread throughout much of West Virginia, and pipelines, compressor stations, and other infrastructure were built. West Virginia has been one of the largest natural gas producers east of the Mississippi River for decades (U.S. Energy Information Administration).

The increasing global demand for energy has renewed interest in natural gas drilling and exploration in the Northeast. New technologies that allow drilling companies to extract vast volumes of gas in shale

rock formations and the discovery of new resources within the Marcellus shale, have caused a modern day "gold rush." These new technologies utilize a horizontal drilling technique and a hydro-fracturing process. A large land area is required for the drilling site. Roads and pipelines are also necessary to access the drilling site and transport the gas once it is captured.

The larger sites required for well pads, associated access roads, and pipelines impact forestland owners by removing trees, altering wildlife habitat, changing property access, introducing or spreading invasive species, introducing new road maintenance issues, and modifying the aesthetic quality of their properties. To help manage these impacts and/or profit from them, forestland owners should understand all aspects of the drilling process, update existing forest management plans, or develop new plans with the assistance of a registered professional forester.

Why are West Virginia's forests important?

According to the West Virginia Forestry Association, forestry and its related industries employed more than 20,000 people and contributed \$2 billion annually

to the state's economy in 2010. It is the only natural resource industry present in all 55 West Virginia counties. Annual tree growth exceeds tree removals from harvesting, insect and fire damage, and conversion of forestland to other uses. West Virginia has stringent regulations for logging and harvesting practices to protect our valued natural resources.

There are 11.9 million forested acres in the state, making West Virginia one of the top five most forested states in the country. Our forests contain nearly 100 species of trees, with northern red oak, white oak, black cherry, maple, and yellow-poplar being some of the most valued by the wood products industry. Forests are also important to the environment because they process carbon dioxide, prevent erosion, provide habitat for wildlife, provide recreational opportunities, and are aesthetically pleasing. Development of any kind within a forest should be well managed to limit damage to these valuable forest resources.

Who owns the trees and minerals?

There are more than 250,000 forestland owners in West Virginia, with private individuals owning the majority of the forests. The type of land ownership varies, and property owners may or may not own the trees above the surface or the minerals, including coal, oil and natural gas, below.

There are three types of land ownership.

Fee Simple – Absolute ownership of everything on the surface of the land (up to 200 feet into the airspace) and under the ground to the center of the earth.

Fee Simple Defeasible – Ownership of property for a certain period of time. For example, you may own the timber rights for a period of 20 years, but once that period of time has run, your ownership ends. The period can be a set number of days, months, or years, or it could end when a certain event occurs, e.g., the wells currently on the property stop producing oil or gas in paying quantities.

Surface Rights Only – Ownership rights of what is on the surface of the land. For example, the oil, gas, and/or minerals below the surface were severed and sold off in the past. It is important to note that the mineral rights, whether for coal, oil, gas, or some other mineral, can all be severed separately.

Owning the “mineral” rights does not necessarily mean that you own the oil and gas rights. The only way to know for certain what type of land ownership you have is to conduct a complete review of your property deed and to search the chain of title to your property in the land

records at the county courthouse. If you own your property in fee simple or if you own only the surface rights, you still own the timber. Landowners can hire attorneys to review deeds and conduct title examinations to determine their ownership status if they do not already know the type of ownership they hold.

Do you have a forest management plan?

Since the majority of West Virginia's forestland is in private ownership, making sound forest management practices on private property is a priority. A forest management plan is beneficial because it defines your long-term goals and objectives for your forestland; a plan can provide you with information and understanding of your property to support you if you should be approached by individuals interested in leasing your mineral rights. Even if you do not own those rights, knowing where the most valuable surface resources are on your property and the locations of your preferred access routes can help when you interact with individuals who might access your property to drill for or extract the minerals.

Forest management plans should be written by a forester who is licensed and registered with the W.Va. Board of Registration for Foresters. For a list of West Virginia registered foresters, go to www.wvlicensingboards.com/foresters/roster.cfm. The plan can include guidance for timber harvesting, reforestation, creating or maintaining wildlife habitat, recreation, protecting

sensitive or unique areas, pest and disease management, fire protection, and mineral extraction. If you already have a forest management plan in place but have not planned for disturbances related to mineral exploration, it is a good idea to revise your plan to include them.

If you do not have a forest management plan, you can seek assistance from state and federal government institutions or nonprofit or private organizations, or you may hire a consulting forester to draft one. The West Virginia Division of Forestry provides a Landowner Assistance Program, which helps private forestland owners develop their own forest management plans. They also have a list of registered, private consulting foresters on their website who can assist you with developing timber sales and can conduct timber damage appraisals. The Natural Resources Conservation Service also offers a forestry incentive program, known as the Environmental Quality Incentives Program to aid with forestland management.

If you are currently enrolled or are planning to enroll in a forestland conservation program or conservation easement program, keep in mind that it will contain restrictions for future property use. For example, the Forest Legacy Program and the Farmland Protection Program are very exclusive conservation easement programs, which usually require clear title to oil, gas, mineral, and surface rights

Other organizations are involved in education and/or technical assistance for forestland owners. Some of these include:

WVU Extension Service
(www.ext.wvu.edu/agriculture)

WVU Appalachian Hardwood Center
(www.ahc.caf.wvu.edu)

W.Va. Woodland Owners Association
(www.woaofwv.org)

W.Va. Forestry Association
(www.wvfa.org)
888-372-WOOD

W.Va. Chapter of Consulting Foresters
(www.wvacf.com)

W.Va. Woodland Stewards Network
(wvstewards.ning.com)

W.Va. Tree Farm Program
(www.wvfa.org/tree-farm.html)

Society of American Foresters
(www.alleghenysaf.org/wvsaf.htm)

for entry into the program. Other conservation easement opportunities are similar; in all cases, surface use must be specified at the time the easement is being formalized. Many will likely not allow certain types of development, including mineral exploration.

What about natural gas rights leases?

If you own the minerals, but you do not want to sign a lease, you do not have to. If you choose to sign a lease, you should seek legal advice. Unless you are a legal professional, an attorney who specializes in writing oil and gas leases is the only one who completely understands the terminology and its meaning within a lease. Do not be afraid to ask the attorney for references regarding previous lease agreements he/she has written.

You may or may not want some of the things that are in a typical lease. Some cannot be changed, but many are negotiable, and the

person who is offering the lease may or may not mention these things. Seeking legal consultation is the best way to ensure that the terms of your lease satisfy your demands for leasing your property.

A typical gas lease may allow for, but not be limited to, dimension of infrastructure and rights-of-way (wells, pipelines, storage fields, gas metering facilities, and/or compressor stations) and reclamation of your land. Because you may or may not want to lease your property for any or all types of infrastructure, be sure to specify what you want and do not want in the lease. As a result, the leasing company may or may not accept these terms into the lease and you may need to continue negotiations to reach an agreement on terms.

If you own only the surface rights, your options are more limited. You are bound by whatever the Lessor has agreed to in the lease. However, the exploration company is still required to follow West Virginia's rules, regulations,

and best management practices for natural gas extraction and reclamation on your land and to compensate you for damages.

Normally, when you own the timber, you can decide when and if to harvest it. However, if gas extraction is going to occur on your land, your trees will be cut sooner than you planned. You can agree up front with the exploration company to a compensation schedule for trees cut during oil and gas operations, or you can choose to conduct your own timber sale. Regardless of whether you own the mineral rights, West Virginia's reclamation law requires payment of fair market value for the trees cut.

To secure fair compensation for your trees, you need to know how many, how much, and the species of trees which will be removed. Not all trees are equal in value, and determining this value can be done by a registered forester. A reputable and knowledgeable forester can help you determine fair market value for the trees that will be lost to roads, to the extraction site, and to pipelines. Even if the trees are not at an age of value, an estimation of their future potential can be determined for financial compensation. Some foresters who carry out timber damage appraisals include the growing potential of the land over the contract period in addition to the value of standing timber.

If you agree to a compensation schedule in your lease, you need to understand that the Lessee may have the timber cut and removed from your property, cut and left behind, or simply bulldozed out of the areas the exploration company will use. Be sure to clearly mark

In the process of developing a lease, it is important to know:

- the person who owns the gas rights is known as the Lessor
- the person who develops the gas rights is known as the Lessee
- exactly what you are leasing your land for
- how long the lease will last and how much you will receive for the rental payment and royalties
- how the land will be reclaimed
- how the process will impact you and your property

those trees that are to be removed to ensure that additional trees are not cut.

If you choose to retain the timber yourself, your forester can help you advertise your timber sale in a competitive bidding process and can recommend loggers to harvest the timber. With this method, the timber will not be cut immediately and an acceptable time frame for removal must be written into your lease agreement. Most timber harvesting contracts are two years in length so account for this in your lease.

Some gas Lessees are willing to leave timber that is cut to clear access roads and gas well pads for the landowner to use regardless of whether they are the gas owners. If this is the case, specify in your lease that the timber be left in an area where it can be easily and safely

transported to a sawmill. Choose a location for stockpiling the timber that is accessible for loading a log truck and communicate with the drilling company that this is where you would like the timber stored. Portable sawmills are also an option and portable saw-millers are found in various parts of West Virginia. However, their portable mills cannot be set up everywhere. These specialty lumber mills need well-developed roads and level areas where they can be set up to mill logs into lumber.

The surface of your land following drilling should also be reclaimed by the company that conducted the extraction. The terms of this reclamation or other work or repairs you feel that the Lessee should do should be negotiated and stated in your lease agreement. Otherwise, the land will be reclaimed to the standards set forth in West Virginia's reclamation laws and regulations.

Learn about all aspects of operation

If your property will be impacted by natural gas development, you should work closely with everyone involved with the process and become knowledgeable about all aspects of the operation. Scheduling a preconstruction meeting with the drilling contractor and developing a good working relationship with them will help you understand the timeline for the entire operation and work in favor of both of you. Covering all aspects of concern and/or including a Surface Use Agreement (if possible) in the lease will ensure that both parties know what is expected of them during the entire process.

How will gas development impact my land?

You may consider addressing these when negotiating a lease if you are also the oil and gas owner. If you do not specify how the land will be used during natural gas development, the surface use will be limited only by West Virginia's statutes and regulations related to gas well operations.

1. Unexpected damages may occur to water, standing trees, and other areas. Determine how you will be compensated.
2. Access roads will need to be built. Negotiate the location of roads by determining where, how many, and the grade-steepness. The grade should be kept below 10 percent, and water control methods should be put in place. Implement the use of existing roads if at all possible.
3. Wells require pipelines to transport the gas. Be involved in planning the route for pipelines and ask if they can follow existing roads or rights of way. Determine if the pipelines are to be buried or left above ground. Oil and gas leases generally specify burial of pipelines below plow depth; however, 36 inches can be requested. If pipelines are to be left above ground, insist that markers be placed along the line at 100-foot intervals. Pipelines that are above ground become covered with leaves and debris within a year or two, making them difficult to locate. Also, in higher elevations, above ground lines without markers are extremely difficult to locate when covered with snow.
4. Negotiate the site of the drilling pad for gas exploration and understand the drilling timeline. Sites for horizontal Marcellus shale gas wells can be 2 to 20 acres in size (depending on the type and scope of the operation), contain large pits for holding drilling cuttings and flow-back water, and take one year or more to complete.
5. The public road or your privately maintained road may incur damages from heavy equipment traffic. Gravel roads can become rutted and unusable following wet weather, and paved roads can develop potholes and crumbled or heaved pavement. Ditches and culverts can become clogged, causing runoff and erosion during heavy rains.
6. For gas wells requiring hydro-fracturing, ask where the water will come from. If they want to withdraw it from water resources on your land which you own the rights to, you may deny the right or negotiate selling them the water needed. Also have a firm understanding of how and where waste water from drilling will be disposed of. If the company has a permit to treat and dispose of waste water on the surface of the property, be aware that the water may damage or kill additional trees and regeneration.
7. Protect areas of special concern. If there are water resources (ponds, springs, spring seeps, or wetlands), unique stands of trees on your property, or other areas that you want to protect, request no development in those areas. Insist on buffer zones between drilling areas and areas of special concern.
8. Disturbance will change the habitat for wildlife that use forested areas. It will displace some animal species and encourage others. Be involved in planning the reclamation of your land. You can request replanting of trees, seeding of wildlife plants, or construction of small ponds. Insist that only native trees, shrubs, grasses, and flowers be planted to avoid nonnative, invasive species from becoming established.
9. The amount of soil compaction that occurs can limit future timber production. Insist on banking topsoil for redistribution on the gas well pad site. Negotiate with the drilling company to apply the right amount of lime and fertilizer following soil test results. You can have your soil tested for free. Contact your county WVU Extension Service.
10. Trees that are not removed along road, pipeline, drilling pad, and digging sites may have their roots cut, have the soil compacted around their roots, or receive damage from equipment on their bark. If the damage is severe, these trees may die in the coming years. It is best to have these trees removed because they may pose potential hazards in the future.
11. Ask what will be done with the woody debris. There may be some areas in which you do not want it disposed of or you may want to be able to access it for firewood.
12. When the site is active, there will be noise, lights, and disturbance. At times it will run 24 hours a day for seven days a week.
13. Depending on the terms of your lease, there may still be activity at the site in the future. Specify gates be closed and locked and access roads be properly maintained.



Remember . . .

The natural gas industry is dependent upon heavy equipment that may disturb water, land, vegetation, and wildlife. The United States Department of Agriculture (USDA) Forest Service recently published a report, *Effects of Development of a Natural Gas Well and Associated Pipeline on the Natural and Scientific Resources of the Fernow Experimental Forest* (Adams, et al. 2010), that is valuable for educating landowners about possible environmental impacts to natural resources.

The West Virginia Department of Environmental Protection's Office of Oil and Gas is responsible for permitting and inspecting gas wells in West Virginia. If pollution or emergency spills occur, you can contact them toll-free at 800-642-3074.

References

Adams, Mary Beth, et al., 2010. *Effects of Development of a Natural Gas Well and Associated Pipeline on the Natural and Scientific Resources of the Fernow Experimental Forest*, General Technical Report NRS-76, USDA Forest Service: Northern Research Station.

History of WV Mineral Industries – Oil and Gas, West Virginia Geological and Economic Survey: www.wvgs.wvnet.edu/www/geology/geoldvog.htm

Sources of Additional Information

Natural Resources Conservation Service Conservation Programs: www.nrcs.usda.gov/programs

West Virginia Department of Environmental Protection, Office of Oil and Gas: www.dep.wv.gov/oil-and-gas/Pages/default.aspx or 304-926-0440

West Virginia Division of Forestry: www.wvforestry.com or 304-558-2788

West Virginia University Extension Service, Oil and Natural Gas: www.anr.ext.wvu.edu/oil_gas

U.S. Energy Information Administration, Natural Gas: www.eia.doe.gov/naturalgas/

West Virginia Geological and Economic Survey, Marcellus Shale: www.wvgs.wvnet.edu/www/datastat/devshales.htm or 304-594-2331

Special thanks to:

Dr. David McGill, *WVU Extension Service Forest Resources Extension Specialist*; Dan Magill, *WVU Division of Forestry and Natural Resources, Appalachian Hardwood Center*; Eldon R. Plaughter and E. Thomas Plaughter, *W.Va. Registered Foresters*; Dave Hill and Bill Gillespie, *W.Va. Registered Foresters and private consulting forester*; and Andrew Graham, Steptoe and Johnson, PLLC; for reviewing and editing this publication.

Created January 2012

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AG12-36