

# SURFACE OWNERS' NEWS

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*The latest news and updates from  
WV Surface Owners' Rights Organization*

VOL. 13, ISSUE 1 | FALL 2021

## NOTE FROM WVSORO:

**IF YOU HAVE A NON-PRODUCING, UNPLUGGED OR ORPHANED WELL ON YOUR PROPERTY, PLEASE CALL OR EMAIL AND LET US KNOW.**

**WE WANT TO KNOW ABOUT IT.** Our goal at WV Surface Owners' Rights Organization is to educate, advocate for, and empower West Virginia landowners.

You have rights. You deserve for those rights to be protected.

Since 2007, our statewide organization has served as a resource for our members and others looking for information and guidance on how to deal with oil and gas related activities on their land and in their communities. We have advocated for

public policy and regulatory changes that have helped surface owners have their rights recognized and respected.

**Contact us.** Your personal stories will help us make the case for the public policy and regulatory changes needed to protect your land, air and water.

- DAVE MCMAHON

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## SCIENTISTS SAY UNPLUGGED OIL AND GAS WELLS IN WV ARE LEAKING LOTS OF METHANE

### Introduction

Scientists from the Department of Civil and Environmental Engineering of Princeton University and the Department of Civil Engineering and Applied Mechanics of McGill University tested four categories of conventional vertical wells in West Virginia for methane leaks. This is the first study we are aware of to seriously investigate fugitive CH<sub>4</sub> emissions from active, unplugged/bonded and unplugged/orphaned

conventional gas production. The scientists tested active wells, unplugged wells that still had responsible operators, unplugged wells that have been orphaned, and they even tested wells that were reported to the State to be plugged. The studied wells are located in 13 counties in north-central West Virginia. They found even plugged wells were leaking methane in significant amounts.

The study's findings were published in an article titled, "Measuring methane emissions

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from abandoned and active oil and gas wells in West Virginia” in the Journal of Science of the Total Environment 651 (2019) 1849-1856.

They found that 53% of the 79 active conventional wells they tested had fugitive methane gas leaks averaging 139 grams (about 9 cubic feet) per hour. They found that 28% of the unplugged wells that still had responsible operators and unplugged wells that had been orphaned by their operators were leaking 3.1 grams (about .2 cubic feet) of methane per hour. And interestingly, they found that 20% of plugged wells were still leaking, though in low amounts (a cubic foot every 4 or 5 days).

Even a rough extrapolation of this leakage to 60,000 active wells, 8,000 unplugged wells with bonded operators, and 3,500 unplugged/orphaned wells yields an enormous amount of methane gas not only wasted, but released into the atmosphere contributing heavily to climate change. In addition, mineral owners would be getting more royalties if less gas is leaked!

In the past, WV-SORO has complained that there are too few oil and gas inspectors and too little enforcement. We exemplified that by the fact that there are 8,000 unplugged wells that still have operators that need to be plugged, and by the fact that 4,500 wells have gone unplugged for so long that the operators have gone out of business. But even more obviously, the fact that there is such a high percentage of wells that are needlessly wasting methane into the atmosphere shows that the current ratio of having one inspector for every 7,000 wells is not nearly enough.

**Terms**

It is necessary to start this with a discussion of terms because the West Virginia Code, and the title of the article, use a misleading term. We will not use the term “abandoned well” which is frequently used because it is misleading as to a subset of wells that fall under that statutory definition

However, we will use the following terms:

- “Active” for the conventional/vertical wells studied (but not



horizontal/Marcellus/shale wells) that are reporting production to the State.

- “Plugged” for wells that State records show have been plugged.
- “Unplugged-w/operator” for wells that have not produced for twelve months and should, by state law already be plugged, but still have, according to State records, a “responsible operator” listing the well under its pittance of a blanket bond.
- “Unplugged/orphaned” for wells that have gone unplugged for so long that the driller/operator has gone out of business so there is no bond in effect (even though bonding has not worked for ensuring that wells get plugged).

West Virginia Code uses the term “abandoned” for both of these last two categories, but since the

unplugged-w/operator wells still have an operator with the wells under their bond, those wells are not truly “abandoned” in the usual sense of the word. So again we will use “active”, “plugged”, “unplugged-w/operator”, and “unplugged/orphaned”.

**Well selection**

It was not feasible to measure methane emissions from all 67,000 + wells in West Virginia. So 338 were tested, including 112 plugged wells, 147 unplugged wells whether bonded with an operator or orphaned, and 79 active conventional wells in located in the following counties: Barbour, Braxton, Gilmer, Harrison, Lewis, Marion, Ritchie, Taylor, Tyler, Upshur, Webster, Wetzel, and Wood. Wells are not easily accessed in West Virginia, so the only wells tested were located within fifty meters of



a public road, or where permission to go onto private property had been obtained, or on the following public lands: Mountwood Park, Lewis Wetzel Wildlife Management Area, Stonewall Jackson Wildlife Management Area and North Bend State Park.

**Measurements**

For each well, a hand-held detector of methane (CH4) that would sound off if there was at least 10 parts per million was used. The detector was very slowly moved across all parts of the wellhead, the surrounding infrastructure and over the ground near the wellhead to screen for fugitive emissions.

If methane was detected, then one of two highly accurate, scientific measuring methods were used. One was a dynamic flux chamber if the wellhead and anything else possibly producing methane would fit into the chamber. If that was not workable then an inverse dispersion method was used -- comparing methane concentrations upwind and downwind from the site.

**Conclusions**

The EPA estimates for fugitive methane emissions from active gas wells used in their top down estimate method is 18 grams per hour per wellhead as cited by the study. By contrast this study using bottom up actual well testing estimated that active conventional wells emit 139 grams of methane per hour. Based on a sampling of reported production on the State website, that meant 8.8% of methane out of a well on average leaks -- with some wells being very bad and raising the average. And, again, 53% of active wells

**The EPA estimates...**

*active conventional wells emit 139 grams of methane per hour.*

# 2021 LEGISLATIVE SESSION: THE GOOD, BUT MOSTLY THE BAD AND THE UGLY

During the 2021 session of the Legislature we were able to have a number of bills we proposed introduced. We also opposed a number of bills.

Mostly we fought to try to preserve and increase funding for the Office of Oil and Gas at the DEP.

As usual, we had some good things happen like helping stop bad bills, but lots of disappointments in getting good legislation passed, and an ugly time with the budget of the Office of Oil Gas (OOG) of the DEP.

Here's a brief overview:

**Funding for the Office of Oil & Gas**

We managed to get HB 2725 introduced, to try to fund the OOG with a \$100 fee on every well in the state. Thank you to Delegate Evan Hansen (D-Monongalia) for sponsoring. Unfortunately, HB 2725 did not pass. We also worked for passage of SB 404, which provided some statutory funding for the OOG using modification fees in addition to the inadequate application fees for well work permits, but it did not raise not

CONTINUED ON PAGE 5

were leaking at least 10 ppm, 28% of unplugged wells of both types were leaking at least 10 ppm, and 20 % of supposedly plugged wells were leaking some amount of methane -- a cubic foot every 4 or 5 days .

Some of these numbers surprised us. We have been around lots of wells -- plugged, unplugged and producing wells, and we do not often smell gas. We contacted the authors of the study

questioning our experience versus their testing, and they quite rightly pointed out that methane gas itself is odorless. Odor is placed in the gas that is used in homes and businesses as a safety measure. And some wells produce gas with impurities such as sulphur and

hydrogen sulfide, which have an odor, but most do not. So the fact that we could not smell gas near wells was a misleading test. And our concerns about leaks from wells were thereby informed and heightened greatly by this study.

The significance of proper estimates of fugitive methane gas emissions in the evaluation of the effect of climate change is significant, but not our specialty. What these new better estimates of fugitive methane leaks at well sites does for us is to emphasize that there are not enough West Virginia inspectors out there, not only not requiring wells to be plugged, but getting them and active wells to stop leaking, and making sure that plugging is done right. §



# WV-SORO OPPOSES DIVERSIFIED PILOT PROJECT TO TAKE SHORTCUTS PLUGGING WELLS

Diversified filed for a pilot "variance" from state plugging rules that would let it put the clay and the cement bridges both inside and outside the uncemented casing, instead of pulling all the uncemented casing — leaving the metal casing there for eternity (or until it rusts out). The public was allowed to comment on the variance and both WV-SORO and the West Virginia Rivers Coalition did so. For more visit [www.wvsoro.org](http://www.wvsoro.org).

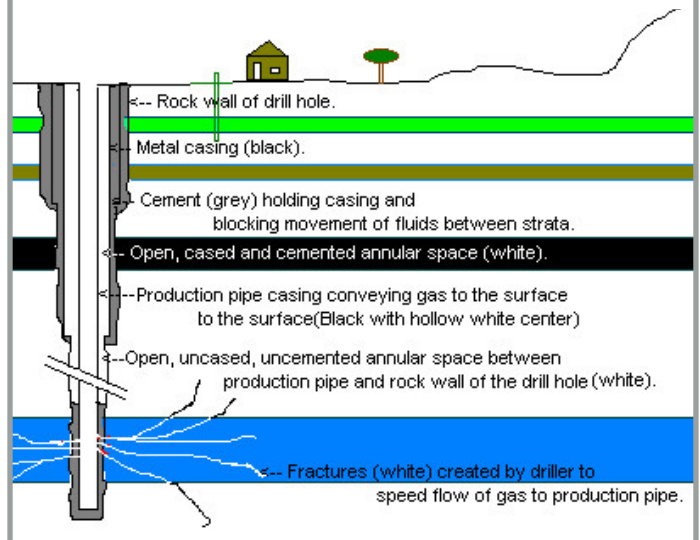
Our main concern was that if the metal pipe casing is left in the hole, it will be difficult to shoot holes in it and properly distribute the clay and cement both inside and outside the casing. Also, we are concerned that the casing, being steel, will eventually rust and create a pathway for gas to migrate between formations and to the groundwater and surface. Some engineers say that without oxygen and water, which the cement and clay prevent from reaching the steel, it will not rust. But the clay is inserted with water. And we do not see that the rules should be weakened as requested by the variance without some way to test this theory, and that could take years.

Unfortunately the DEP approved the variance for a number of test wells.

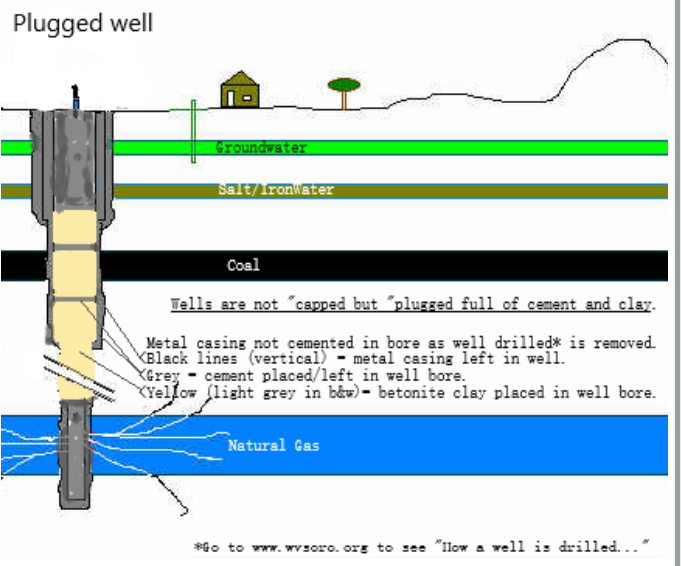
After that occurred we came upon the article discussed in another story in this newsletter about scientific testing of not only active and unplugged wells, but testing of plugged wells. And it found that **gas was leaking around 20% of plugged wells it tested!** Was that because the State rules are inadequate, or the state rules were not followed?

Until someone figures this out, it is not the time to grant variances. So, even though it was past the deadline and the variance had already been granted, WV-SORO filed a supplemental comment pointing out the scientific methods for methane testing used in the article and requesting they be used to test the wells that the variance applied to in order to see if those wells leak methane.

When oil and gas wells are drilled, drillers are required to insert concentric rings of pipe called "casing" down the hole. Some of the casings are surrounded with cement to hold them in place in the ground and prevent leakage on the outside of the casing. The main purpose of all of these casings is to protect groundwater, keep the gas flowing to the pipelines, and protect other mineral formations such as coal and other gas formations. WV-SORO has a slide show on its website under "Resources" called "How a Gas Well Is Drilled down into the Ground, and What Can Go Wrong" that has received lots of compliments. It explains the various casings and how they are installed.



At the end of its useful life the well has to be plugged. Plugging is not capping like a pop bottle. It involves going down in the well and cutting the uncemented casing at the bottom and pulling it all up and out; and then filling the well up with special clay with cement "bridges" at various levels to provide an extra seal.



\*Go to [www.wvsoro.org](http://www.wvsoro.org) to see "How a well is drilled..."



*Bad And Ugly - Cont. from pg 3*

nearly enough money. However, it did pass! (See article on page 6 for details on the subject of funding for oil and gas inspectors, etc.)

### **Protecting Surface Owners**

We got HB 2074 and 2132 introduced to implement the studies done back in 2011 that showed surface owners needed more protections from the impacts of horizontal drilling. Thanks to Delegates Evan Hansen, Terri Sypolt (R-Preston) and Barbara Fleischauer (D-Monongalia). Getting a good version of one of those passed would be great.

However, we won the *EQT vs. Crowder* case in the West Virginia Supreme Court that said that the drillers need the surface owner's consent to use their land to drill into neighboring mineral tracts. And we did not want that case weakened, and since the Legislature has not been our best friend, we decided not to push it hard unless we got a real opportunity to pass it in good form, and that opportunity never arose.

### **Orphaned Well Prevention**

We got HB 362 and HB 2579 introduced to try to assure plugging of played out wells before they become orphans. However, these bills would have cost the industry money up front, and as such, were strongly opposed and did not even move out of committees. Thanks to our sponsors: Delegates Hansen, Ed Evans (D-McDowell), Kayla Young (D-Kanawha) and Larry Rowe (D-Kanawha), and Senators Randy Smith (R-Tucker), Stephen Baldwin (D-Greenbrier), Charles Clements (R-Wetzel), Ron Stollings (D-Boone), Bill Hamilton (R-Upshur) and Mike Maroney (R-Marshall).

### **Pipelines**

We had plans for legislation that would have required pipeline companies to pay landowners what having the pipeline across the farmer's land is worth to the pipeline company and their gas buyers, instead of what a meadow was worth to the farmer. While it got heads nodding, in the heat of a COVID fearing session, nothing happened in that area, and

fortunately the building of pipelines is dying down.

There were two other pipeline bills introduced, HB 2675 and SB 491 regarding interest rates for money paid in pipeline property condemnation proceedings, which we supported. HB 2675 got out of committee, but it was voted down on third reading by the House. Thanks anyhow to Delegate Vernon Criss (R-Wood) and Senators Clements and Rich Lindsay (D-Kanawha) for sponsoring.

### **Land Reunion**

We got the bill introduced again that would have given surface owners the right to step into the shoes of someone who bought the minerals under their land at a tax sale (SB 265). Thank you to Senator Dave Sypolt (R-Preston). It has moved in previous sessions but not passed, and it did not even move in this session. We may need to work on technical issues with it since mineral lands are not mapped like surface lands giving its enemies stones to throw at it.

### **Bad Bills We Opposed**

We opposed SB 427 that would have made it more difficult for inspectors to go onto land, and it died.

We opposed HB 2598, the "tank deregulation bill". It would have weakened the protections that were enacted after the chemical spill that affected the West Virginia American water supply of Charleston and surrounding areas a few years ago. The bill would have moved inspection of those tanks in "zones of critical concern" near water supplies from special Aboveground Storage Tank inspectors to inspectors of the Office of Oil and Gas. The OOG inspectors already have too

many wells to inspect. It passed the House but died in the Senate Judiciary Committee, where it was on the agenda, but removed and did not come back. Thank you to Senator Charles Trump (R-Morgan).

Finally, we opposed this year's two forced pooling bills -- SB 538 and HB 2853 -- and they died. While we have always said that a good forced pooling bill would be good and maybe even result in less surface disturbance, the bills introduced by the industry were mostly designed to help industry, and not worthy of support. §

## WHAT ARE ORPHANED WELLS?

*Orphaned wells are depleted oil and gas wells that have been left behind unplugged when drillers go out of business.*

*This process leaves the wells the burden of government agencies or landowners when a business entity can no longer be held responsible.*



# WV-SORO BLASTS BUDGET FOR FAILURE TO ADEQUATELY FUND OFFICE OF OIL & GAS

## REDUCED STAFFING LEVELS NOT EVEN FUNDED

After the end of the 2021 Legislative Session the WV-SORO issued a press release blasting the State Senate and House of Delegates for cutting the budget of the Department of Environmental Protection's Office of Oil and Gas. Last year, the Office had to reduce its staff from 40 positions to 25 positions. The result was one oil and gas inspector for every 7,000+ oil and gas wells in West Virginia plus their associated tanks and well roads.

David McMahon, cofounder of the organization, said the Office of Oil and Gas is the only permitting office of the DEP that does not get federal money to help run it, and it is the only one that is funded by one-time permit application fees instead of annual operating permit fees.

The Office was never adequately funded, and now that one horizontal shale Marcellus well produces 60 times the gas

as one conventional vertical well, there are a lot fewer applications, and the Office is starving. We thank the Legislature for passing SB 404 that raised the Office's revenue by adding horizontal well permit modification fees. But the Legislature killed HB 2725 and SB 712 that would have put a mere \$100 per year annual fee on wells to fully fund the Office during the full life of the wells.

And to add insult to injury the Legislature cut the Office's spending authority in the Budget bills proposed by both bodies from \$4.8 Million last year to \$3.1 Million this year!<sup>1</sup> Even worse, without further action from the Legislature, the Office does not have enough revenue to generate that \$3.1 Million that is in the budget, and it will operate at a deficit and not have the revenue to fund even its reduced staff next year.

McMahon also pointed out in the press release that the House

of Delegates passed, and the Senate considered HB 2598 that will drop inspections of 800 oil and gas well tanks by the Division of Water and Waste Management. These tanks are in "zones of critical concern" near public drinking water supplies, and they would have been added back into the tanks at 70,000 wells that the ten oil and gas inspectors need to inspect. Fortunately, that bill died in the Senate Judiciary Committee.

Next year the Legislature needs to do something to not only restore the funding of the Office of Oil and Gas to its \$4.1 Million budget of two years ago, but raise it to \$8 Million to do the job right. See the article in this newsletter regarding methane gas leaks. §

<sup>1</sup> 2020 SB 150 "Oil and Gas Operating Permit and Processing Fund" 3323. 2021 SB 125 and HB 2022 same fund.

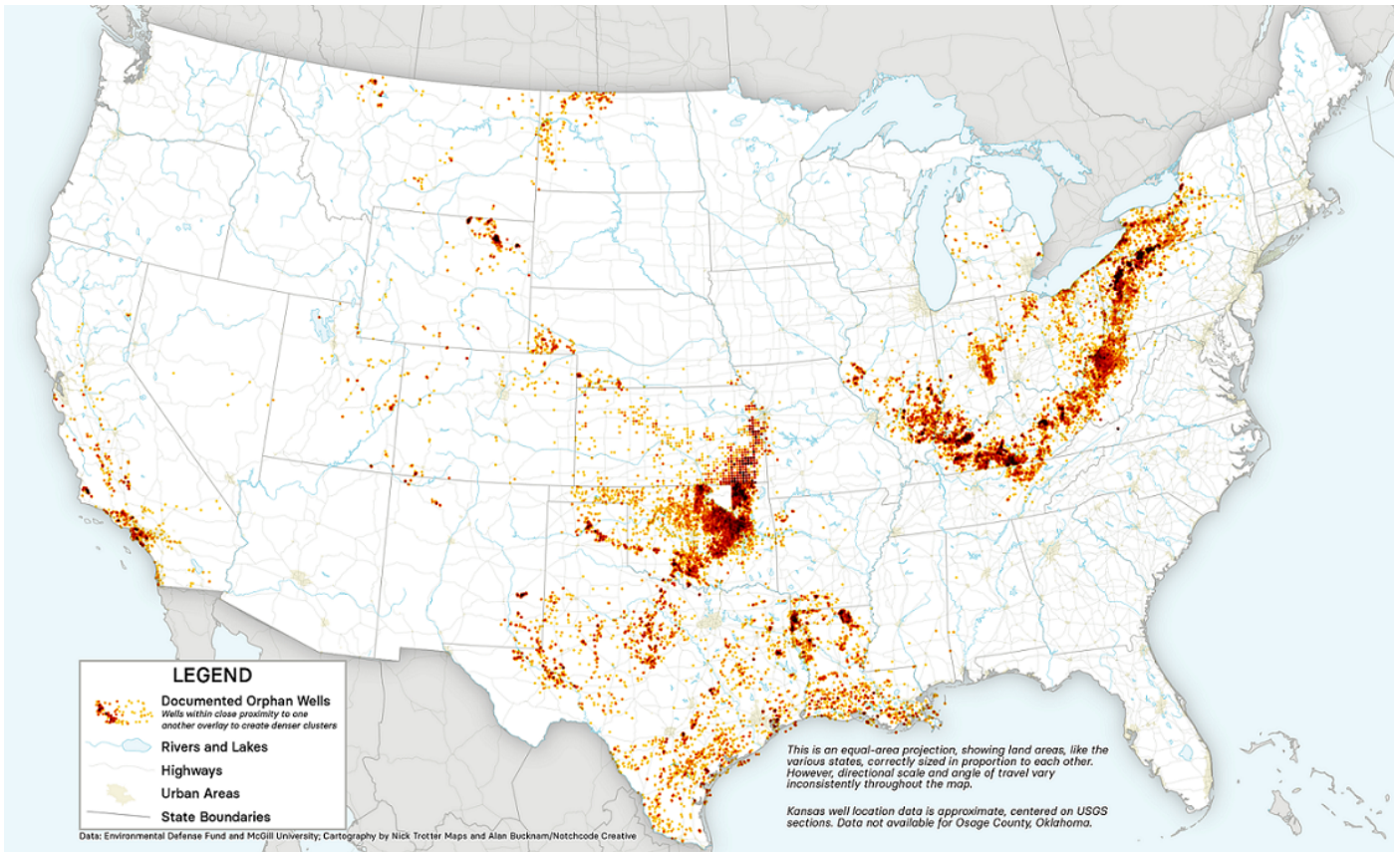


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## FEDERAL LEGISLATION PASSES FOR PLUGGING MANY ORPHANED WELLS!

OK. We confess we have been procrastinating on sending out a newsletter, though as you can see from other articles in this newsletter, WV-SORO has been busy! But one of the big reasons we have been hesitating is that we wanted to be able to announce that the federal "infrastructure" legislation passed and that it would provide lots of money nationally to plug orphaned wells with extra money for that purpose for states like ours that had or will be taking action to prevent and deal with orphaned wells. In addition, we hoped to report that the so-called "budget reconciliation" package that started out at \$3.5 Trillion passed Congress in some amount, because it might contain even more money for plugging. In fact, we even had a draft of this newsletter saying we could not wait any longer-- saying that both items of legislation might pass.

Then good news, hot off the

presses, is that the infrastructure bill has passed! The bad news is that the \$3.5 Trillion bill, if it does pass (don't know as of press time), will likely not include money for plugging orphaned wells.

Over the past year, WVSORO has probably spent more time on federal funding for orphaned wells than on any other issue. We think we made a difference in getting funding for plugging orphaned wells into this national legislation, and in a form that benefits West Virginia!

We have been coordinating principally with the Western Organization of Resource Councils and the Environmental Defense Fund (though we frame this more an issue of property rights than environmental concern). These organizations have lobbyists on the ground in Washington. We even worked some with the Interstate Oil and Gas Compact Commission, the national organization of state

government oil and gas regulators. We have talked in person with Senator Capito, and we have talked with Senator Manchin's staff of the important committee he chairs.

As always, there is good news, but not the best possible news.

When a well is abandoned and left unplugged, it can leak oil and other toxic chemicals, endanger local water sources, contribute to air pollution and emit methane – a powerful greenhouse gas. They also hurt local economies through





Federal - Cont. from pg 7

depressed home values, damage to agricultural lands and disrupt other subsurface uses like carbon capture and sequestration. These orphan wells can have a dramatic impact on local communities. They not only cause serious threats to the health and well-being of residents but also lower real estate values. This in turn can lower funding levels for local schools, police departments and other public services.

The Infrastructure bill contained the provisions of a piece of Senate legislation called "The REGROW Act (S. 1076; H.R. 3585)". It will by rough estimate result in West Virginia getting enough money to plug 4,000 orphaned wells. It will also provide money to West Virginia to find orphaned wells that are not currently accounted for in the State's records. And it gives extra money to states like West Virginia that are already taking steps to deal with orphaned wells.

West Virginia already knows it has about 4,500 orphaned wells. However, we know that there are lots of wells drilled prior to 1929 that may not have made it into the state records. And we also know that as of August 2020, West Virginia had 7,350 wells that were not yet orphaned, that need to be plugged because they are no longer producing. And we also know that in November 2021 that number is now 11,156. And we also know that the drilling companies who drilled many of those wells cannot compete with the big companies drilling new horizontal shale wells and so will not be drilling new wells that could supply money to plug their old wells. And it is certain that production and income for these small companies from their existing wells are fading, so many of those wells will likely be orphaned. In addition to all this, we also know of one company, Diversified, that bought fading wells from the big companies who are drilling horizontal shale wells in order to milk the old vertical wells for 25 years, likely leaving 10,000 unplugged, unprofitable wells behind.

Some previous good news was that WV-SORO was able to



get State legislation passed in 2020 that we estimate will generate enough income for the State to, over 30 years, plug 4,000 wells. In fact WV-SORO had important input into the federal legislation to make sure that West Virginia's actions regarding the legislation it passed previously would be considered in dividing up the federal money, because states that are taking action on orphaned wells themselves will get a bigger share.

However, we need to stay active on this issue. Even with the federal money and the state money, there will not be enough to plug all the existing and all predicted new orphaned wells. So we need to redouble our efforts to do what we can to prevent more drillers from walking away from more unplugged wells in the future. In addition, we need to make sure that the federal and state money is obtained and not wasted or used imprudently. That in itself will be a big job.

Nevertheless, this new investment in plugging orphan wells and repairing the surrounding land is a huge step forward in

creating well-paying jobs and cleaning up decades-old threats to our health, our water and our communities. It will further provide critical funding to find, map and document the hundreds of thousands of undocumented orphan wells that are polluting our communities.





# 2022 WVSORO LEGISLATIVE PRIORITIES

**Fully Fund the Office of Oil and Gas:** In 2020, staff was cut from 40 to 25. Require industry to pay \$100 per well to fund the OOG. There is now only ONE (1) inspector for every 5,000 wells.

**Orphaned Well Prevention:** Prevent Thousands and Thousands More Wells from Becoming Orphaned.

**Protect Surface Owners:** Implement the Recommendations of the WVU Studies Required by the 2011 Horizon Well Act.

**Land Reunion:** Let Surface Owners Step into the Shoes of the High Bidder If an Interest In Their Minerals Is SOLD at a Tax Sale.

**Pipelines:** Require Compensation Paid to Landowners in Eminent Domain Proceedings for Pipelines to Be Based on Its Value/Worth to the Pipeline Company.



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# WV Surface Owners' Rights

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## WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL

Office of Oil and Gas

Charleston, WV

May 2012



west virginia department of environmental protection

"Promoting a Healthy Environment"

Oil and gas well drillers are supposed to plan, construct, vegetate, MAINTAIN and reclaim well sites and well roads according to this "West Virginia Erosion and Sediment Control Field Manual". If there is a problem on your land, download the Manual from our website, or get a copy from the State, and find out what is supposed to be done and complain to the State about the problem. Drillers rarely do it right, particularly on conventional old wells, and the State should make them do it right once it is pointed out. Or if there is a problem that is not covered by the Manual, use the driller's non-compliance as leverage to get done what you want.



This is what a well should look like after it has been plugged. If there is more there than this required "monument" of the plugged well, then it has not been plugged and it is either producing or should be plugged. Look up its production/status using the "API" number that should be on it (should look like 047-0??-0????). For more info on API numbers & uses, go to ["More Helpful Links and How To Find Information on Particular Gas Wells"](#) on our website.