



EARTHWORKS

December 5, 2018

Mr. Art Cappella
Planning, Zoning, and Community Development
Fayette County Courthouse
61 East Main Street
Uniontown, PA 15401

Cc: Ms. Brandi Rosselli, Mackin Engineering

Dear Mr. Cappella:

Please accept the following comments on the forthcoming Fayette County Comprehensive Plan on behalf of Earthworks, a national nonprofit organization committed to protecting communities and the environment from the impacts of mining and energy development while seeking sustainable solutions. For more than 25 years, we have fulfilled our mission by working with communities and grassroots groups to reform government policies, improve corporate practices, influence investment decisions and encourage responsible materials sourcing and consumption.

We appreciate the opportunity to offer our experience in air quality issues and what we have learned through working nationwide and in Pennsylvania, including in Fayette County.

1. Air quality is an important resource in Fayette County

Fayette County's 2000 Comprehensive Land Use Plan highlights the importance of the natural environment to the county's character and its future. It positions growth and land use within the context of "preserving the character of this rural county. ... [which] attracts millions of people a year who come to enjoy its rural quality of living, ... natural resources, [and] world-class outdoor recreation." Enjoyment of the natural beauty and outdoor recreation in Fayette County is threatened by air pollution--as well as land clearing and development--from the growing oil and gas sector, and the new Comprehensive Plan is a key opportunity to begin a process that will ultimately institute public protections from the industry.

2. Oil and gas development is a massive and growing contributor of air pollution in Fayette County

About 58,500 Fayette County residents live within ½ mile of an oil or gas well; 57 of the county's schools are located just as close¹. The county currently houses over 3,000 active oil and gas wells, almost 300 of which are deep Marcellus Shale wells. Between January and November of this year, the DEP permitted two new conventional wells and 41 unconventional wells²--a ten-fold increase over recent years. In the two years prior, DEP issued only four total permits per year for Fayette County oil and gas wells.

Earthworks conducted several months of research in Fayette County between 2012-2014 and found significant health and environmental concerns associated with gas facilities. As reported in the reports *Gas Patch Roulette*³, *Blackout in the Gas Patch*⁴ and *Permitted to Pollute*⁵, this research included air sampling near compressor stations in Fayette County. We identified the presence of a class of air pollutants called volatile organic compounds (VOCs), which are scientifically known to reduce air quality and cause health symptoms such as those reported to us in health surveys completed by nearby residents.

¹ https://www.edf.org/pa-oil-gas/?_ga=2.24714492.795955620.1542486598-1494669206.1539866639#/inventory

² http://www.depreportingservices.state.pa.us/ReportServer/Pages/ReportViewer.aspx?/Oil_Gas/Permits_Issued_Detail

³ https://earthworks.org/publications/gas_patch_roulette_full_report/

⁴ <https://earthworks.org/publications/blackout/>

⁵ https://earthworks.org/publications/permitted_to_pollute/

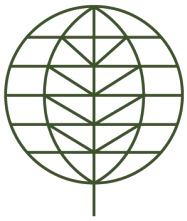
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Our case study⁶ on Lake Lynn residents surrounded by gas wells and a compressor station outlines the health symptoms they have experienced more acutely since gas operations began near their homes, including fatigue, congestion, sore throats, coughs, headaches, skin rashes, and neurological disturbances. Our findings, reported in a 2013 peer-reviewed article⁷, are consistent with other scientific studies on the health impacts of oil and gas development.

In addition, Earthworks' specialized Optical Gas Imaging (OGI) cameras have documented numerous instances of pollution being released from gas facilities in Fayette County and moving toward nearby homes, including where residents have experienced an onset or worsening of health symptoms since the compressor stations were built. This footage can be viewed here:

Williams Laurel Mountain Midstream Springhill Compressor, New Salem, Fayette County:

April 2015: <https://youtu.be/IrswVhCEPt4>

March 2016: <https://youtu.be/fUG5vVR90N8>

Williams Laurel Mountain Midstream Shamrock Compressor, Lake Lynn, Fayette County:

April 2015: <https://youtu.be/BEnXCMZARYM>

Compilation of footage from 2015-2016: <https://youtu.be/x7PqQHpuav0>

Earthworks is not alone in our concern over the impact of oil and gas pollution on Fayette County. The Pennsylvania Department of Environmental Protection (DEP) has singled out Fayette as one of four Pennsylvania counties to receive new air monitors expressly for the purpose of monitoring growing pollution from the shale gas industry. According to the DEP's draft 2018 Annual Ambient Air Monitoring Network Plan⁸, "The extraction and processing of natural gas from shale gas involves many stages and provides many opportunities for the release of air pollutants during the process." It acknowledges public "concern over short-term exposure to pollutants in relation to shale gas activities and the effect on susceptible populations including children, or those with respiratory difficulties" and "an increase in the number of complaints to PA DEP's regional offices concerning shale gas operations." Furthermore, "as a result of these comments and complaints, PA DEP has begun to establish new monitoring sites and install PM2.5 [fine particulate matter] monitors in shale gas producing counties across the Commonwealth," such as Fayette County.

Based on the industry's own data, Fayette County bears a heavy burden of toxic air pollution every year. Operators of compressor stations in Fayette county reported a massive 134,120 tons of air pollution (including large volumes of 2,2,4-Trimethylpentane, Benzene, Toluene, Carbon Monoxide, Ethyl Benzene, Formaldehyde, and n-Hexane) in 2016 alone.

However, the total pollution may be significantly worse than reported. Data compiled in an independent analysis by Environmental Defense Fund (EDF) indicates that oil and gas operators in Fayette, as in the rest of Pennsylvania, grossly underestimate and underreport their emissions⁹. In 2015, operators of Fayette County facilities reported only 184 tons of a class of pollutants called volatile organic compounds (VOCs). The analysis by EDF estimates the actual amounts were about *6.5 times greater* at 1200 tons.

⁶ https://earthworks.org/publications/blackout_case_study_6_the_carr_family/

⁷ Nadia Steinzor, Wilma Subra, and Lisa Sumi, "Investigating Links Between Shale Gas Development and Health Impacts through a Community Survey Project in Pennsylvania." *NEW SOLUTIONS*, Vol. 23(1), 2013.

⁸ [http://www.depgreenport.state.pa.us/elibrary/GetDocument?docId=29432&DocName=DRAFT%202018%20ANNUAL%20AMBIENT%20AIR%20MONITORING%20NETWORK%20PLAN.PDF%20%20%3Cspan%20style%3D%22color%3Ablue%3B%22%3E\(NEW\)%3C%2Fspan%3E](http://www.depgreenport.state.pa.us/elibrary/GetDocument?docId=29432&DocName=DRAFT%202018%20ANNUAL%20AMBIENT%20AIR%20MONITORING%20NETWORK%20PLAN.PDF%20%20%3Cspan%20style%3D%22color%3Ablue%3B%22%3E(NEW)%3C%2Fspan%3E)

⁹ https://www.edf.org/pa-oil-gas/?_ga=2.24714492.795955620.1542486598-1494669206.1539866639#/inventory

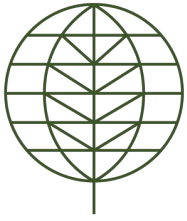
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3. We recommend a proactive, precautionary approach

DEP may not release the results of its shale gas air monitoring in Fayette County for some time. Based on delays to the finalization of its air monitoring plan, and the historically delayed release schedule of previous air quality data by DEP (such as the two-year lag in its release of air emissions inventories) the public may have a long wait to begin learning what the new air monitor reveals about oil and gas pollution in the county.

As a result, any plans for the county--such as the draft Comprehensive Plan--should take a proactive and precautionary approach to ensure greater protections for the wellbeing of county residents. We strongly recommend that the Comprehensive Plan include specific measures to protect the public from the health and property impacts of oil and gas pollution, and that it recognizes the incompatibility of this industry with the healthy environment that should continue to characterize Fayette County.

To this end, we suggest that the Comprehensive Plan call for crucial revisions to the County's current zoning ordinance¹⁰, which fails to provide adequate protections and leaves vast portions of the county vulnerable to the encroachment of this industry. In fact, the current zoning ordinance is dangerously permissive of oil and gas development, thereby putting people and the county's rural character at risk. It permits oil and gas wells or allows for their consideration as a "special exception" just about everywhere in the county.

In fact, only business/commercial districts are immune. By this measure, the current zoning ordinance treats oil and gas development more leniently than agricultural activity, driving ranges, social service agencies, massage parlors, and libraries. This is especially shocking considering the known health impacts of this industry, and means that operators may receive permission to site wells in even densely populated residential areas.

Moreover, the zoning ordinance offers residents a mere *200 feet* of mandatory protection from oil and gas wells. For comparison, the state of Pennsylvania has declared a minimum 500 foot setback distance for unconventional gas wells. This puts Fayette County at odds with current state law--as well as the recommendations of scientists regarding setbacks necessary to protect health and well-being¹¹. Municipalities in Pennsylvania--such as nearby West Pike Run Township in Washington County--have set far more protective ordinances to extend setbacks to 1000 feet.

Universal safe setback distances for oil and gas development have yet to be scientifically established. However, an abundance of peer-reviewed research provides scientific bases for delineating set-back distances of a half-mile or greater. This includes a recent and well-publicized study of infant birth weights in Pennsylvania relative to proximity to oil and gas wells¹², which showed "evidence for negative health effects of in-utero exposure to fracking sites within 3 km [1.86 miles] of a mother's residence." Air pollution from compressor stations, for another example, is known to travel far beyond the site of release. A study¹³ which concluded that "a substantial fraction of natural gas is escaping uncombusted" from these pollution sources also observed that "the signal is detectable hundreds of kilometers downwind."

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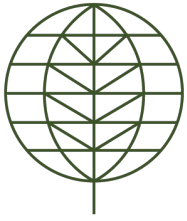
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¹⁰ http://www.co.fayette.pa.us/planningzoning/Documents/fayettecounty zoning11_2006.pdf

¹¹ Lewis C, Greiner LH, Brown DR (2018) Setback distances for unconventional oil and gas development: Delphi study results. PLoS ONE 13(8): e0202462. <https://doi.org/10.1371/journal.pone.0202462>

¹² Currie, J., Greenstone, M., Meckel, K., "Hydraulic fracturing and infant health: New evidence from Pennsylvania." Science Advances, December 13, 2017.

¹³ Vinciguerra, T., et al., "Regional air quality impacts of hydraulic fracturing and shale natural gas activity" Atmospheric Environment, (2015) 144-150.



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Fayette County's zoning ordinance blatantly contradicts itself by in turn *prohibiting* harmful air pollution in one section, and then in other sections *permitting* an industry known to pollute. *Section §1000-507. Air pollution* states that "No pollution of air by fly ash, dust, vapors or other substance shall be permitted which is harmful to health, animals, vegetation or other property...." The industrial processes and facilities required to extract, process, transport oil and gas all release health-harming air pollution. An overwhelming 87 percent of peer-reviewed studies on shale gas development contain findings that indicate "elevated air pollutant emissions and/or atmospheric concentration," and 84 percent indicate "public health hazards, elevated risks, or adverse health outcomes."¹⁴

Fayette County has both the power and the obligation to guard its greatest resources--its residents and the natural beauty and outdoor recreation for which it is so well-known. The county's role in creating safeguards is all the more important because state-level regulations may not be sufficient to protect the public and the environment from the harms of oil and gas development. As of October, the DEP has levied 54 violations against oil and gas wells in Fayette in 2018 alone, 49 of which were classified as environmental health and safety violations¹⁵.

We strongly recommend that Fayette County use its new Comprehensive Plan to launch the process of revising the zoning ordinance to a) prohibit new oil and gas development at least until the release and interpretation of sound air monitoring data by the DEP, b) limit any future oil and gas development to M-2 Heavy Industrial areas, and c) require setback distances between oil and gas facilities and occupied structures (to include residential buildings and schools) of a minimum of .5 miles, in accordance with scientifically established environmental health recommendations.

Finally, we hope that the Planning, Zoning, and Community Development agency will take seriously the concerns expressed by Fayette County residents about the impacts of gas operations on their health and quality of life. As local officials, your planning decisions can reduce these impacts.

It is our sincere hope that the county will take this invaluable opportunity to preserve what makes Fayette such a highly desirable place to live and visit. We welcome any questions you may have or further information we can provide.

Thank you for your time and attention.

Sincerely,

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¹⁴ <https://www.psehealthyenergy.org/our-work/publications/archive/the-science-on-shale-gas-development/>

¹⁵ http://www.depreportingservices.state.pa.us/ReportServer/Pages/ReportViewer.aspx?/Oil_Gas/OG_Compliance