Rulemaking Petition to Adopt Minimum Setbacks for Unconventional Oil and Gas Wells (25 Pa. Code Chapter 78a)

Submitted by Clean Air Council and the Environmental Integrity Project

Presentation by Lisa Hallowell, Senior Attorney, Environmental Integrity Project

ENVIRONMENTAL QUALITY BOARD

APRIL 8, 2025 MEETING 9:00 a.m.

Room 105, Rachel Carson State Office Building, 400 Market Street, Harrisburg, PA, and via Microsoft Teams

Photo Credit: Environmental Integrity Project and Karen Kasmauski (farm in Washington County, PA).

Photo Credit: Kelly Finan. Distance from elementary school playground to wells is about 3,920 feet.

Photo Credit: Jen Nagy. Distance from home to well is approximately 700 feet.

Photo Credit: Michelle Stonemark. Distance from home to well pad is approximately 500 feet.

Photo Credit: Clean Air Council. Distance from daycare to well pad is 1,046 feet.

The Board has clear authority and a *mandate* to act on this petition.

LAW	LANGUAGE	CITATION
Oil and Gas Act	§ 3274. Regulations. The Environmental Quality Board shall promulgate regulations to implement this chapter.... § 3202. Declaration of purpose of chapter. The purposes of this chapter are to: (1) Permit optimal development of oil and gas resources of this Commonwealth consistent with protection of the health, safety, environment and property of Pennsylvania citizens. (2) Protect the safety of personnel and facilities employed in coal mining or exploration, development, storage and production of natural gas or oil. (3) Protect the safety and property rights of persons residing in areas where mining, exploration, development, storage or production occurs. (4) Protect the natural resources, environmental rights and values secured by the Constitution of Pennsylvania....	2012 Pa. Laws 13 (codified in Title 58 of the Pennsylvania Code).
	The Pennsylvania Supreme Court has specifically stated that the fact "[t]hat neither Section 3215 [of the Oil and Gas Act] nor any other statutory provision explicitly binds the Agencies to a 'floor' invariably means that the Agencies were permitted to go farther."	Marcellus Shale Coal. v. Dep't of Env't Prot., 292 A.3d 921, 939 (Pa. 2023) (plurality).
Clean Streams Law	§ 691.5. Powers and duties (a) The department, in adopting rules and regulations, in establishing policy and priorities, in issuing orders or permits, and in taking any other action pursuant to this act, shall, in the exercise of sound judgment and discretion, and for the purpose of implementing the declaration of policy set forth in section 4[1] of this act, consider, where applicable, the following: (1) Water quality management and pollution control in the watershed as a whole; (2) The present and possible future uses of particular waters; (3) The feasibility of combined or joint treatment facilities; (4) The state of scientific and technological knowledge; (5) The immediate and long-range economic impact upon the Commonwealth and its citizens. (b) The department shall have the power and its duty shall be to: (1) Formulate, adopt, promulgate and repeal such rules and regulations and issue such orders as are necessary to implement the provisions of this act....	35 P.S. § 691.5
Air Pollution Control Act	Section 5. Environmental Quality Board.— (a) The board shall have the power and its duty shall be to-- (1) Adopt rules and regulations, for the prevention, control, reduction and abatement of air pollution, applicable throughout the Commonwealth or to such parts or regions or subregions thereof specifically designated in such regulation which shall be applicable to all air contamination sources regardless of whether such source is required to be under permit by this act. Such rules and regulations may establish maximum allowable emission rates of air contaminants from such sources, prohibit or regulate the combustion of certain fuels, prohibit or regulate open burning, prohibit or regulate any process or source or class of processes or sources, require the installation of specified control devices or equipment, or designate the control efficiency of air pollution control devices or equipment required in specific processes or sources or classes of processes or sources.... (5) Adopt rules and regulations for the protection of public health and safety for periods when the accumulation of air contaminants in any area is attaining or has attained levels which, if sustained or exceeded, could lead to an acute threat to the health of the public. Such rules and regulations shall contain appropriate procedures to protect public health and safety during such periods....	35 P.S. Chapter 23

The requested setbacks are a common-sense step to better protect Pennsylvanians.

This Petition requests, based on peer-reviewed studies, the following minimum setback distances for any new UOG well to protect health:

- 3,281 feet from any building or drinking water well;
- 5,280 feet from the property boundary of any building serving vulnerable populations (e.g., schools, daycares, hospitals); and
- 750 feet from any surface water of the Commonwealth.

Source: Marcellus Air

42 independent, peer-reviewed studies found significant dangers at current setback distances.

See Attachment C of our Petition for a summary of health impacts and distances studied:

Peer-Reviewed Literature on Impacts of Unconventional Oil & Gas Wells: Chart

Category	Cite #	Name of Study	Author(s)	Year Published	Health or Environmental Effects	Distance of Recorded Health or Environmental Impacts	Link to Study
Residential Areas and Buildings: General Impacts	1	Exposure Assessment of Adults Living Near Unconventional Oil and Natural Gas Development and Reported Health Symptoms in Southwest Pennsylvania	Hannah Blinn et al.	2020	Respiratory, Neurological, and Muscular Symptoms	16,404 feet (3.1 miles)	https://doi.org/10.1371/journal.pone.0237325
	2	Hydraulic Fracturing Epidemiology Research Studies: Birth Outcomes	Jeanine Buchanich et al.	2023	Infant Health Outcomes	26,400 feet (5 miles)	https://paenv.pitt.edu/assets/Report_Birth_outcomes_Revised_2023_July.pdf
	3	Unconventional natural gas development and birth outcomes in Pennsylvania, USA	Joan A. Casey et al.	2016	Infant Health Outcomes	65,617 feet (12.4 miles)	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4738074/
	4	Unconventional Oil and Gas Development Exposure and Risk of Childhood Acute Lymphoblastic Leukemia: A Case–Control Study in Pennsylvania	Cassandra J. Clark et al.	2022	Acute Lymphoblastic Leukemia in Children	6,562 feet (1.2 miles)	https://ehp.niehs.nih.gov/doi/10.1289/EHP11092
	5	Hydraulic fracturing and infant health: New evidence from Pennsylvania	Janet Currie et al.	2017	Infant Health Outcomes	9,843 feet (1.9 miles)	https://www.science.org/doi/10.1126/sciadv.1603021
	6	Shale Gas Development and Infant Health: Evidence from Pennsylvania	Elaine Hill	2018	Infant Health Outcomes	8,202 feet (1.6 miles)	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6629042
	7	Setback Distances for Unconventional Oil and Gas Development: Delphi Study Results	Celia Lewis et al.	2018	Health Outcomes	N/A	https://doi.org/10.1371/journal.pone.0202462
	8	Congenital Heart Defects and Intensity of Oil and Gas Well Site Activities in Early Pregnancy	Lisa M. McKenzie et al.	2019	Infant Congenital Heart Defects	3,281 feet	https://doi.org/10.1016/j.envint.2019.104949

Alarming impacts have been documented.

- "The number of reported health symptoms per person was higher among residents living [3,281 feet] compared with [6,562 feet] from the nearest gas well." Study 9, Rabinowitz.

- "Results indicated that children who lived within 1 mile of a well had approximately 5 to 7 times the chance of developing lymphoma, a relatively rare type of cancer, compared to children who lived in a place with no wells within 5 miles." Study 11, Talbott et al.

- "Children with at least one vs. no UOG wells within [6,562 feet] during the perinatal window had 2.80 times the odds of developing ALL [acute lymphoblastic leukemia]." Study 4, Clark et al.

- "The introduction of drilling increased low birth weight and decreased term birth weight on average among mothers living within [8,202 feet] of a well compared to mothers living within 2.5 km of a future well." Study 6, Hill.

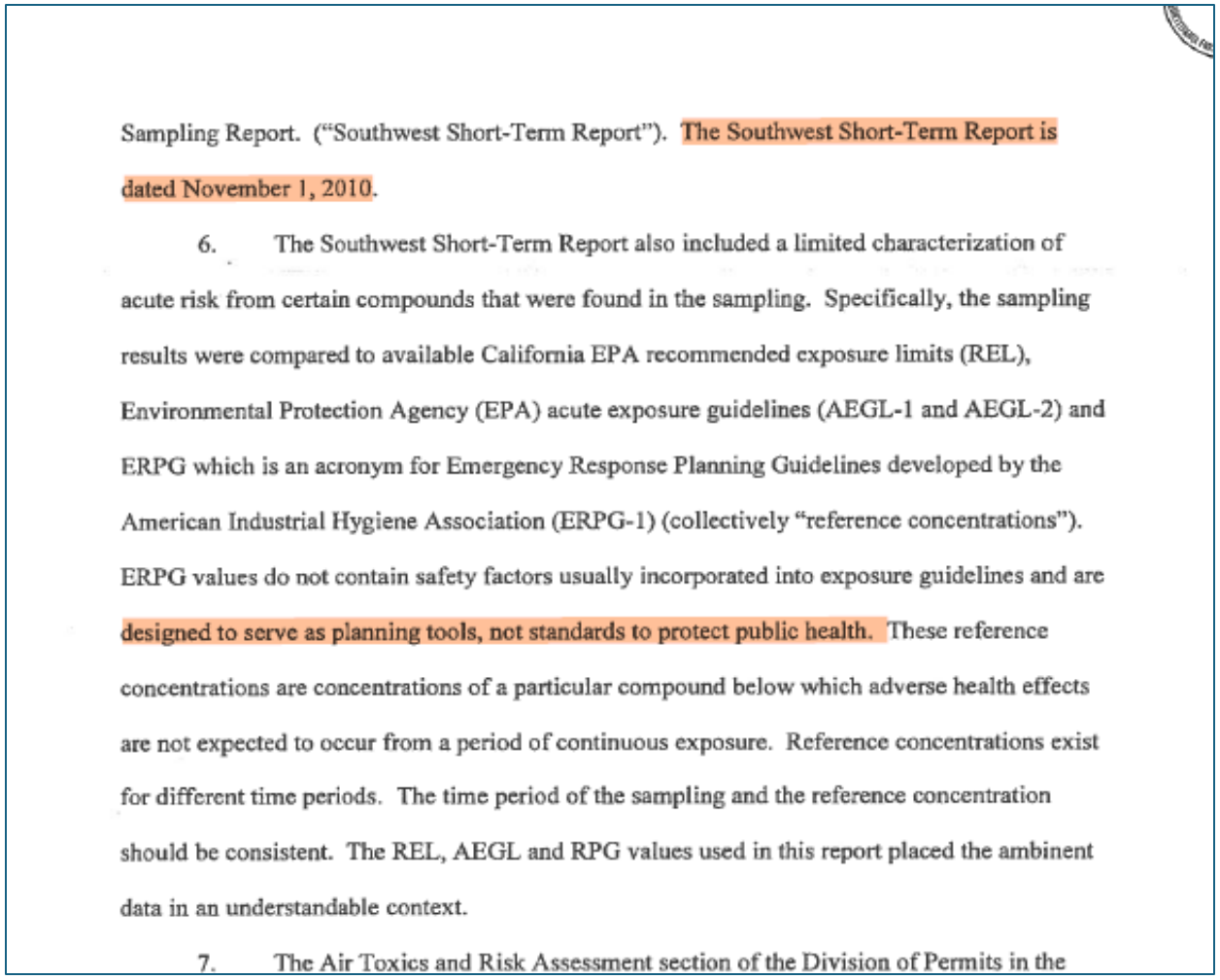
See Attachment C of our Petition for a summary of health impacts and distances studied.

Photo Credit: Marcellus Air.

Current setbacks relied on DEP air studies that DEP itself admits:

- Did not make conclusions about safety or long-term health effects;
- Did not analyze cancer risks;
- Did not analyze cumulative impacts;
- Did not involve any public health officials;
- Did not analyze all fracking pollutants measured, such as methyl mercaptan, which DEP later found had a hazard quotient of 145.7 (with unsafe levels being a hazard quotient above 1);
- Did not involve air monitoring at wet gas well sites;
- Only monitored for less than a week (2 to 4 days).

Affidavit of Nicholas Lazor, Director, Bureau of Air Quality, DEP:



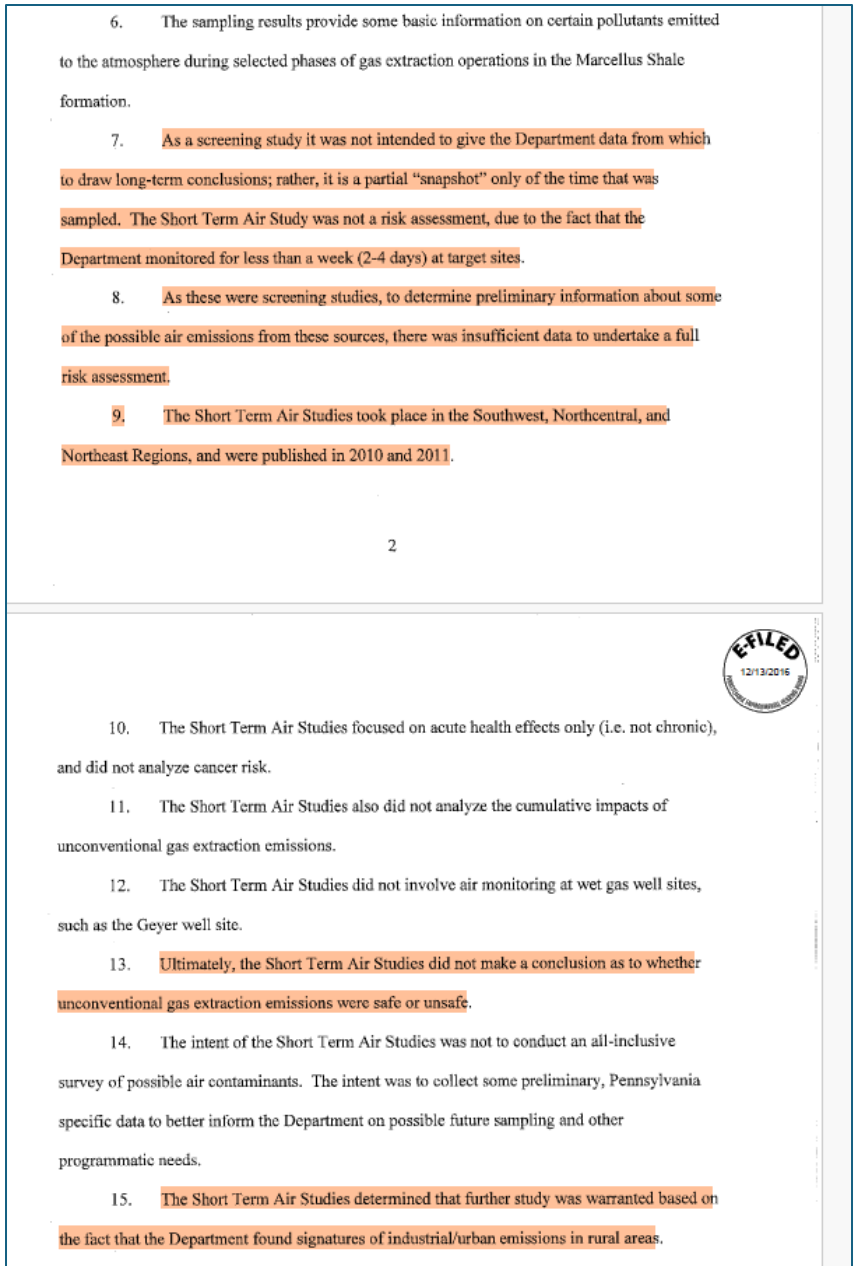
Sampling Report. ("Southwest Short-Term Report"). The Southwest Short-Term Report is dated November 1, 2010.

6. The Southwest Short-Term Report also included a limited characterization of acute risk from certain compounds that were found in the sampling. Specifically, the sampling results were compared to available California EPA recommended exposure limits (REL), Environmental Protection Agency (EPA) acute exposure guidelines (AEGL-1 and AEGL-2) and ERPG which is an acronym for Emergency Response Planning Guidelines developed by the American Industrial Hygiene Association (ERPG-1) (collectively "reference concentrations"). ERPG values do not contain safety factors usually incorporated into exposure guidelines and are designed to serve as planning tools, not standards to protect public health. These reference concentrations are concentrations of a particular compound below which adverse health effects are not expected to occur from a period of continuous exposure. Reference concentrations exist for different time periods. The time period of the sampling and the reference concentration should be consistent. The REL, AEGL and RPG values used in this report placed the ambinent data in an understandable context.

7. The Air Toxics and Risk Assessment section of the Division of Permits in the

Source: *Del. Riverkeeper Network et al v. DEP and R.E. Gas*, EHB Docket No. 2014-142, Ex. A-44 (filed Oct. 4, 2016) (Affidavit of Nicholas Lazor, DEP, Chief, Air Quality Monitoring Division, Bureau of Air Quality, dated Feb. 11, 2014, from *Haney et al v. Range Resources-Appalachia, et al.,* Docket Nos. 2012-3559 and 2012-7402 (Wash. Cty. Ct. Common Pleas, Feb. 11, 2014).

DEP's Stipulation of Facts:



6. The sampling results provide some basic information on certain pollutants emitted to the atmosphere during selected phases of gas extraction operations in the Marcellus Shale formation.

7. As a screening study it was not intended to give the Department data from which to draw long-term conclusions; rather, it is a partial "snapshot" only of the time that was sampled. The Short Term Air Study was not a risk assessment, due to the fact that the Department monitored for less than a week (2-4 days) at target sites.

8. As these were screening studies, to determine preliminary information about some of the possible air emissions from these sources, there was insufficient data to undertake a full risk assessment.

9. The Short Term Air Studies took place in the Southwest, Northcentral, and Northeast Regions, and were published in 2010 and 2011.

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10. The Short Term Air Studies focused on acute health effects only (i.e. not chronic), and did not analyze cancer risk.

11. The Short Term Air Studies also did not analyze the cumulative impacts of unconventional gas extraction emissions.

12. The Short Term Air Studies did not involve air monitoring at wet gas well sites, such as the Geyer well site.

13. Ultimately, the Short Term Air Studies did not make a conclusion as to whether unconventional gas extraction emissions were safe or unsafe.

14. The intent of the Short Term Air Studies was not to conduct an all-inclusive survey of possible air contaminants. The intent was to collect some preliminary, Pennsylvania specific data to better inform the Department on possible future sampling and other programmatic needs.

15. The Short Term Air Studies determined that further study was warranted based on the fact that the Department found signatures of industrial/urban emissions in rural areas.

Source: Source: *Del. Riverkeeper Network et al v. DEP and R.E. Gas*, EHB Docket No. 2014-142, Parties' Joint Stipulation Regarding Facts and Exhibits (filed Dec. 13, 2016).

This rulemaking will not stop fracking.

Companies are drilling 5-mile laterals.

"Report: Expand Energy Drills Record 5.6-Mile Lateral in West Virginia's Utica Shale in Just Five Days," *WV News* (Mar. 12, 2025).

"[I]ndustry's new normal: superpads — concrete platforms that can house 30 wells, maybe even 40, with long horizontal tentacles stretching underground for up to 4 miles in each direction."

Anya Litvak, "These days, oil and gas companies are super-sizing their well pads," *Pittsburgh Post-Gazette* (Jan. 15, 2018).

Photo Credit: Garth Lenz and Environmental Integrity Project. Distance from well pad to home is approximately 1,280 feet.

Pennsylvanians want these common-sense fracking setbacks.

Conclusion

This Petition for Rulemaking meets all the requirements under the Board's regulations at 25 Pa. Code § 23.5.

42 independent, peer-reviewed scientific studies show that fracking at the current setbacks harms Pennsylvanians.

EQB must act now to increase minimum setbacks from ***new*** fracking wells to homes, water resources, and vulnerable populations using the data-supported distances presented in our petition.

The Board has a statutory mandate to protect health and the environment, and the time to act is now.

Photo Credit: Bob Donnan.

Questions?

Video Credit: Earthworks. Distance from Vankirk Clark Well Pad to nearest home: 564 feet.

Video Credit: Lois Bower-Bjornson. Distance from well pad to home is approximately 572 feet.

Rebuttal to Industry’s April 2, 2025 Letter

Marcellus Shale Coalition's attempts to minimize the health risks posed by proximity to fracking wells are unreliable.

Information presented was:

- Biased (e.g. data from industry itself, like CNX);
- Unauthored (e.g. notes on a "blog" with no author listed);
- Not based on independent data;
- Not peer-reviewed;
- Riddled with shortcomings (e.g. the PM2.5 study authors acknowledged substantive shortcomings from the potential dilution of short-term effects by composite sampling over a 24-hour period).

One industry-sponsored study (Long et al, 2021) claimed to evaluate potential exposures from a well pad to a nearby school campus. However, the campus is located upwind or crosswind of the Yonker well pad and upwind or crosswind of all of the study's air monitoring stations. The wind almost never blew from the well pad toward the campus. Therefore, the study provides almost no information about potential exposure to UOG air contaminants from the well pad at the school. *See* Marc Glass, Report.

MSC's letter also failed to identify any discrete concerns with a single study we cited.

Source: https://marcelluscoalition.org/wp-content/uploads/2024/12/Health-Environmental-Impacts-Studies-l.pdf (last visited Apr. 3, 2025) (cited in Letter from Jim Welty, President, Marcellus Shale Coalition, to Jessica Shirley, Environmental Quality Board, Re: Rulemaking Petition on New and Expanded Setbacks for Unconventional Oil and Gas Facilities, n5 (Apr. 2, 2025)).

DEP's 2018 air studies are also not a credible source to support the current setbacks.

The Pennsylvania Department of Health assessed DEP's 2018 Long-Term Air Study and found:

1. The data was insufficient for assessing specific emissions impacts from the natural gas sources on ambient air quality in these communities.
2. The location of monitors did not capture air quality data with discreet sampling downwind of the targeted emissions sources on most of the days that samples were collected.
3. Some of the chemicals known by PADOH/ATSDR to be associated with the oil and gas industry were not investigated by PADEP.
4. Some chemicals analyzed had detection limits that were too high for comparison to ATSDR health-based comparison values.
5. Some of the sample collection periods were too long to allow analysis of short-term peak exposures.

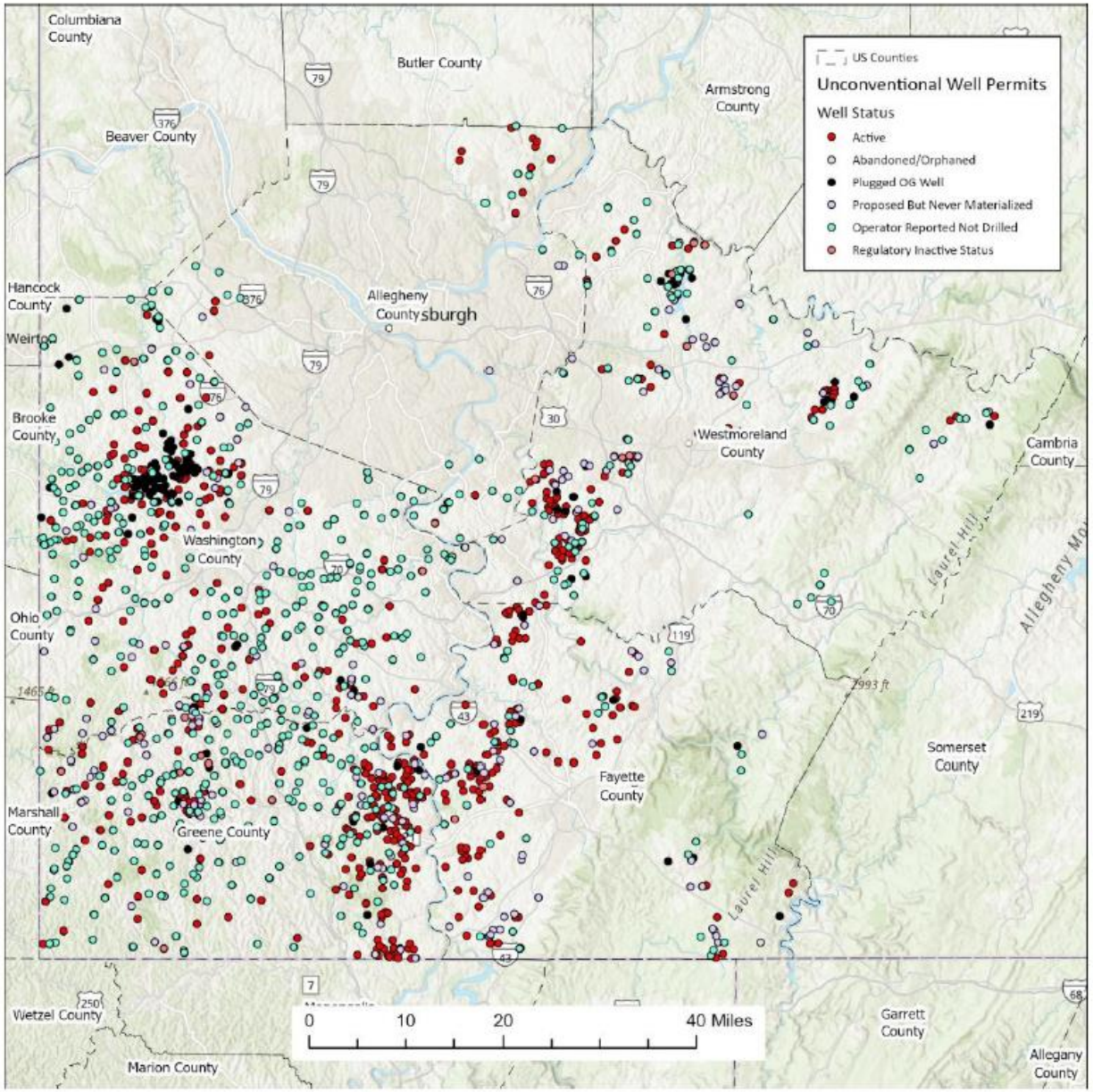
This, in tandem with DEP's own admissions regarding the inappropriateness of using the earlier Short-term air studies for public health decisions and industry's failure to show that the current setbacks are protective, show the need of EQB and DEP to rely on the recent studies provided to set health-driven protective buffers.

See: Report of Marc Glass, Downstream Strategies.

This rulemaking will not stop fracking.

It will not apply to existing wells.

Figure 1: UOG well permits in Allegheny, Fayette, Greene, Washington, and Westmoreland counties



Source: PADEP Oil and Gas Mapping https://gis.dep.pa.gov/PaOilAndGasMapping/.