

**Public Comments on
Pennsylvania's Shale Gas Boom: How Policy
Decisions Failed to Protect Public Health
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Senator Muth, Senator Brewster, and other esteemed senators of the Pennsylvania Senate:

Good afternoon. My name is Makenzie White and I am the Public Health Manager for the Environmental Health Project. I hold a master's degree in Public Health and a master's degree in Social Work from the University of Pittsburgh. Through my graduate school focus on community health and community organizing, I pursued certificates in global health and human services management and worked specifically with the Deaf community of Pittsburgh in improving access to health services. I am currently a practicing and licensed social worker in Pennsylvania where I provide children and adolescents therapy services. I have worked with nonprofits serving individuals with physical, developmental, and mental health disabilities. I am president of the Pittsburgh Professional Chapter and a consultant for Engineers Without Borders USA.

I would like to begin my comments by citing two examples of Pennsylvania residents experiencing health impacts from shale gas development, as reported in the records of the Pennsylvania Department of Health.

One resident reported to the DOH that high levels of methane were exiting from the gas line passing through their yard—specifically 44.1 mg/l, while the Pennsylvania Department of Environmental Protection's action level is 7 mg/l. DEP conducted water testing and shared the information, at which point the DOH expressed concerns that the identified levels of methane represent a fire and explosion threat. The DOH subsequently commented, saying the "DEP stated that the well cap has been loosely placed on the well to facilitate venting, but that basically there was nothing that DEP could do to correct the situation since they do not yet know the source of methane." DOH suggested the residents connect to municipal water, to which the resident informed them they could not afford to connect to city water and pay for its use. No resolution is noted in this record.

Another resident, of Susquehanna County, reported to the DOH concerns of a loud whooshing sound and rotten egg smell at night at their home for more than eight hours. The family was experiencing red and irritated eyes, bloody noses, increased coughing and nasal allergies, and intense headaches. The supervisor at the metering station said they were purging lines and fixing a leak, but the health symptoms continued beyond that initial incident each evening. Both of the family dogs became sick, another animal died, a chicken and a rooster died, and their rabbit died 30 minutes after being near the station. The DEP did not conduct air monitoring. Instead, they merely observed the odor and described it as “very minimal.” DOH told the individual that, due to lack of environmental sampling data, they were unable to assess exposure and recommended the family do private well water testing and follow up with their primary care physicians. No further action was taken.

These are just two examples of individuals who have been impacted by shale gas development. Both of these complaints were pulled from the redacted DOH Natural Gas Drilling Log Issue Documentation, which predated the current oil and gas registry.

As a public health professional, I find these stories—along with the ones we heard earlier today from our other panel speakers—to be quite concerning. I am reminded of the American Public Health Association [Code of Ethics](#), which states that, “Public health practitioners and organizations have an ethical responsibility to prevent, minimize, and mitigate health harms and to promote and protect public safety, health, and well-being.” And while not everyone here today is a public health professional, legislators are in a position to represent their constituents—so many of whom have similar stories to what we have heard today.

Published research, along with emissions data gathered from shale gas sites and documented health symptoms, reveal that Pennsylvania residents have been experiencing a serious and ongoing public health crisis with respect to shale gas extraction. Dozens of peer-reviewed epidemiological studies, and over 70 peer-reviewed studies looking specifically at health impacts from shale gas development, have shown correlations between proximity to shale gas sites and poor health outcomes.

It has been established that air emissions from shale gas sites contain levels of particulate matter and other toxic substances such as formaldehyde, per- and polyfluoroalkyl substances (PFAS), and volatile organic compounds (VOCs), such as benzene and toluene. More recent studies have shown that the radioactivity of airborne particles increases significantly downwind of shale gas sites, raising the possibility of elevated cancer risk. As shale gas development increases, so do reports of illness.

Researchers are continuing to make progress in understanding health conditions associated with closer proximity to shale gas development. They have identified four primary types of health outcomes in these areas:

- Immediate acute effects, which appear in the nervous, respiratory, cardiac, and dermal systems.
- Delayed effects, which occur after an accumulation of toxics in the body or after a chemical interacts with an existing health condition.
- Protracted effects, occurring from the body’s inability to completely expel a toxic before another exposure intensifies it.
- And lastly, chronic effects from neurotoxins, carcinogens, particulate matter, and sensitization to chemicals. These effects typically result from longer-term exposures, but for some substances, a single significant dose can precipitate the onset of disease.

More specifically, peer-reviewed studies indicate that health impacts increase the closer one lives to shale gas facilities. These studies show concerning evidence of health harms including symptoms such as:

- Worsening asthma symptoms
- Headaches
- Fatigue
- Upper and lower respiratory complaints
- Skin rashes
- Babies born with low birth weight
- Babies born with congenital heart defects and neural tube defects
- Hospitalizations for heart failure
- Mortality from acute myocardial infarction (heart attack)
- Stress, anxiety, depression, and other mental health symptoms

There can be no mistaking that an enormous health burden is falling squarely on residents living in proximity to shale gas development.

Sometimes, when harm is evident or the risk for harm is very high, a public health institution or officials will have to act with *imperfect information*. We have seen this in public health responses throughout history, including most recently with COVID-19. Public health institutions and legislators had to make decisions with knowledge known at the time to protect the public from the pandemic. Waiting for a new set of research studies—which will not be ready for months or years—can put community members at unnecessary risk if, instead, the exposure can be blocked long enough for public health officials to understand the problem and develop a possible remedy. Pennsylvania’s governmental bodies largely ignored this precautionary approach in the face of known and unknown exposures to shale gas development. But it is not too late to change this story. We can still take actions to protect the health of Pennsylvanians and ensure a healthier future for all.