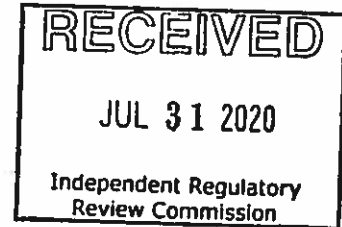


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**Testimony of Bernard D. Goldstein, MD**

**Public Hearing for Pennsylvania Environmental Quality Board  
Proposed Rulemaking –  
Control of VOC Emissions for Oil and Natural Gas Sources**

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I am the retired dean of Pitt's Graduate School of Public Health, and a physician and scientist who published my first paper on the toxicity of ozone more than 50 years ago, My work on the health effects of air pollutants has led to my being elected to the National Academy of Medicine. I have served on the US and the Canadian national academy evaluations of the shale gas industry, and worked in Europe on this issue.

I want to emphasize that during this half century I have worked closely with industry, including serving in governmental agencies headed by those considered to be pro-industry. This includes being chair of EPA's Clean Air Scientific Advisory Committee under Administrator Ann Gorsuch and then being appointed by President Reagan as EPA Asst Administrator for Research and Development. Unfortunately, my belief that US industry overall had come a long way in responding to environmental issues has been countered by the unforgiveable self-centered greed of the overwhelming majority of the Marcellus shale industry in our Commonwealth

Let me briefly compare ozone and methane. Fortunately the EQB proposal addresses both. Ozone is highly toxic, particularly to children who are outside exercising during periods when highest levels of ozone

are present. But as a public health physician I am far more concerned about the health impact of the climate change forcing effects of methane- one of which will be to further increase the levels of ozone.

The Board will hear much about the health effects of ozone and of climate change, so let me take advantage of my five minutes to focus on three control issues which I believe need further emphasis

1. **First**, the data on methane release from cooperative drilling companies is noteworthy for the exceptional variation from site to site and at different times, variation that will also affect VOC release. The resulting hot spots have a major impact on total VOC and methane release. The best way to eliminate these hot spots is to compel this technically highly skilled industry to focus on the sources of this variation by increasing oversight and imposing consequences for failure. Governor Wolf's proposal begins to do that but needs to go much further. Importantly, until there is at least 5 years of data from all sites, this marked variation in release from different sites and at different times means no site should be exempted from thorough and repetitive inspection. And this perhaps would not be necessary had the industry in the past been more cooperative in providing release data
2. **Second**, the appropriate metric for the role of the shale gas industry in climate change is not to merely be better than coal

In contrast to most other sources, methane that is deep underground in shale formations only becomes part of the global methane cycle when the drilling industry brings it to the surface. Allowing an industry to bring up this climate forcing agents should require that as little as possible is released to the air. The industry needs to accept this as part of their social license to operate

rather than stonewall oversight of their methane-releasing operations by claiming that they are better than coal.

3. Third, the appropriate regulatory approach to VOC and methane emissions from UGD would be to require MACT – (Maximum Available Control Technology) rather than the less stringent reasonable available control technology

In US law the primary policy used to control the hydrocarbon emissions of the oil and gas industry, under Section 112 of the Clean Air Act, has been to require what is now known as maximum available control technology (MACT). But methane is an exception as are individual unconventional gas drillings sites. In essence, MACT requires the entire industry to conform to the best actors, which is a way of rewarding those who chose to use the best pollutant control technology, rather than giving a competitive advantage to the bad actors who spend as little as possible on pollution control. This should be the state and federal approach – and no site should be exempted

I conclude by thanking Governor Wolf and the DEP for this very necessary first step. But if we are to protect public health and the environment, we must go beyond this proposal.