

E. Christopher Abruzzo
Secretary, Pennsylvania Department of Environmental Protection
Rachel Carson State Office Building
400 Market Street
Harrisburg, PA 17101

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Via e-mail and hard copy cabruzzo@pa.gov

RE: Shale Gas Development and Mars Area School Permitting Decision

Dear Secretary Abruzzo,

We write to you and other representatives of the Pennsylvania Department of Environmental Protection (PA DEP) in regard to shale gas development and the Mars Area School permitting decision. As you know, there has been much discussion concerning the potential impacts of shale gas development to the environment and human health. While there is still a dearth of quantitative epidemiology that assesses associations between risk factors and health outcomes, there is a growing body of peer-reviewed science that provides significant evidence of public health risks [1,2]. These risks are of particular concern to our most vulnerable populations (e.g., children), who may be disproportionately exposed and adversely affected by these health hazards [3].

The peer-review process is the cornerstone of scientific inquiry. Our organization, PSE Healthy Energy (www.psehealthyenergy.org), is committed to providing citizens and policymakers with objective, evidence-based information on energy production methods. Towards this end we have compiled a near exhaustive database of *all* the peer-reviewed articles on unconventional oil and gas development. This library is open to the public and can be accessed at <http://www.psehealthyenergy.org/site/view/1180>. We have learned two very important points about shale gas development in the creation and review of this collection of scientific literature.

First, there are clear, well-defined pathways of exposure (e.g., air, water) from shale gas operations to human populations. There are numerous investigations that have linked modern natural gas operations to surface and groundwater contamination and this is well documented in the peer-reviewed literature [4–8] and in PA DEP reporting [9]. Emissions of health damaging air pollutants such as nitrogen oxides (NO_x), volatile organic compounds (VOCs), aromatic hydrocarbons, particulate matter (PM), and ground level ozone (smog) precursors including methane (CH₄) and VOCs occur throughout the life cycle of shale gas development. While the issue of determining a safe distance to develop unconventional gas from sensitive receptors is complex, evidence suggests that populations located within a mile of unconventional oil and gas development are subject to a statistically significantly elevated hazard from air pollution exposure than those