

Faith Zerbe

please see comments to the regulations. thank you for your time.

## **DRBC Public Hearing Highlights – Faith Zerbe**

Our family has a fifth generation family farm (our 3 nieces are the 5<sup>th</sup> generation) about an hour west of here – about 20 mins west of the Schuylkill River which flows into the Delaware River. Our grandfather was a dairy farmer who had a small herd of prized Guernsey cattle that he and my grandmother and aunts took great pride in. Our grandfather was a farmer but he was also a coal worker – working in a coal breaker to help make ends meet and we have many relatives including two grandfathers who have worked in the mines, died in the mines when maps were inaccurate and water veins were hit in the deep mines, were injured in mines from cave ins, or who died from coal mining black lung and other health complications from lax regulations.

Today my sister lives and manages the family farm and has spent the last several years converting the farm soils into healthy organic soils without the use of chemicals which became a may stay after my grandfather passed and our farmland had been leased for my dad’s generation though we all grew up on the farm.

### **Testimony**

In 2010 we did not have the volumes of evidence and studies now available in the literature that makes a complete frack ban the most conservative, protective and essential approach now for the Governors and the DRBC to enact to protect the rights and freshwater that is essential to all life. A complete ban if the NJ, NY, PA, and De Governors and the fed rep institute this logical approach --- also means less essential resources going to ineffectively regulating a fossil fuel industry that bucks the system and major environmental protection laws on numerous fronts and tactics.....we have seen this play out in history time and time again. We need to keep the gas drillers out of the Basin and spend more time cleaning up the polluters and non point source pollution that is already here while preserving the Special Protection Waters of the Basin that DRBC worked so hard to implement over the past decades in the Upper Basin which still is an incredible forested and intact area of the Basin that deserves protection not exploitation of gas drilling.

### **DRN Community Shale Watch Program**

DRN organized and trained volunteer monitors in the potential shale impact zone to monitor the health of the local streams threatened by fracking...what we found and documented over 7 years of collecting data is a healthy diverse ecosystem that thrives with low dissolved solids and chlorides, healthy dissolved oxygen and pure water.

- February 2010 to June 2016, volunteers collected 1,351 stream samples from 123 stations, and analyzed samples for conductivity, temperature and chloride
- In addition, the monitors collected 60 samples from 44 different stations, to be analyzed for barium and strontium (Ba/Sr). --- two signature chemicals from fracking operations
- Conductivity is a measure of the capability of water to hold electrical current. Conductivity readings from the 1,351 samples, ranged from 2.36  $\mu\text{S}/\text{cm}$  to 586.50  $\mu\text{S}/\text{cm}$ , with a mean conductivity of 75.44  $\mu\text{S}/\text{cm}$ . The conductivity measurements were within normal ranges for surface water.

- DRN and trained volunteer monitors also conducted benthic surveys as well as submitting a petition to upgrade the upper Delaware to exceptional value for its exceptional diversity and protections in place. These insects and diversity – esp mayflies and stoneflies that are a key source for thriving fish populations and that also filter out and clean our drinking water downstream **are very sensitive to chloride fluctuations found in drill waste.**
- The DRB is host to many cold water species; one of the most sensitive of these is trout. According to the Pennsylvania Fish and Boat Commission, the maximum temperature that brown/rainbow trout can sustain is 25.6°C, whereas the maximum temperature that can be sustained by brook trout is 22.2°C. The ideal average temperature range for trout, however, is between 10°C and 15.5°C. The average temperature recorded at all stations, along with the maximum temperature for brown/rainbow trout and ideal temperature range for trout, can be seen in Figure 2 below.

**West Branch Lackawaxen River** --- where Exxon XTO wanted to withdraw freshwater from a headwater forested stream I could almost hop over – to use this vital water to frack in Wayne County to the west where fracking was occurring. Volunteers helped document threatened species (including mussels) in the Lackawaxen and a diverse benthic community to call for no withdrawals...we were victorious with the DRBC moratorium – but now DRBC wants to consider freshwater withdrawals again with proposed regulations – how could this be if the science and not politics is ruling the day?

**Fracking footprint – cumulative projected harm too great** --- projections and build out in the DRB for three upper Delaware County analysis conducted by CNA commissioned by DRN--- The total area of land disturbed in the DRB at the completion of gas development could be **18-26 square miles**. This is about the same area as **570-840 Wal-Mart SuperCenters including their parking lots**.

## Overwhelming Science

- The most recent statistical analysis of the body of scientific literature by the Concerned Health Professionals of New York and Physicians for Social Responsibility, 685 peer-reviewed papers examining gas drilling and/or hydraulic fracturing (“fracking”) were reviewed and the overwhelming majority of studies found evidence of or potential adverse impacts on water, air, and human health.<sup>1</sup> There is significant evidence that natural gas development, and its related operations, which include all the phases of the hydraulic fracturing (“fracking”) process, from the first stage of industrial land preparation; to the storage, handling, and use of chemicals and additives for extraction and stimulation; to drilling and fracking; to the withdrawal of and degradation of large volumes of water and its discharge and disposal as waste, has substantial adverse effects on public health, property interests, agriculture, and on our air, water, and land.<sup>2</sup>

---

<sup>1</sup> PSE Healthy Energy Library, [https://www.zotero.org/groups/pse\\_study\\_citation\\_database/items](https://www.zotero.org/groups/pse_study_citation_database/items); See Compendium, <http://concernedhealthny.org/compendium/>, p. 4  
Delaware Riverkeeper Network, “Unsafe and Unsustainable,” [http://www.delawariverkeeper.org/Documents/DRN\\_Report\\_Unsafe+Unsustainable\\_fr.pdf](http://www.delawariverkeeper.org/Documents/DRN_Report_Unsafe+Unsustainable_fr.pdf)

<sup>2</sup> PSE Healthy Energy Library, [https://www.zotero.org/groups/pse\\_study\\_citation\\_database/items](https://www.zotero.org/groups/pse_study_citation_database/items); See Compendium, <http://concernedhealthny.org/compendium/>, p. 4; Environmental Protection Agency (EPA). 2015.

The Endocrine Disruption Exchange has a database of over TEDX's FrackHealth Database –TEDX is a science based, nonprofit research institute. Their mission is to reduce harm caused by exposure to chemicals that affect the body's endocrine (hormone) system. We do this by identifying, evaluating, synthesizing, and interpreting scientific evidence.

### **Cash Strapped Agencies and Not Enough Police Power – Industry Always 5 steps ahead of regulations**

In 2010 we still had and continue to have cash strapped regulatory agencies that cannot possible regulate this harmful industry effectively. The precautionary principle must be instituted now with a complete ban – the world is watching. By the Governors calling for a complete ban – we will set a strong example with the growing numbers of communities banning this practice and putting their sustainable efforts before short term corporate fossil fuel profits.

**Attack at federal level underway now – EPA guts** Just released today ---- seen a measurable difference in the way the U.S. Environmental Protection Agency (EPA) has been holding polluters accountable compared to the past 25 years. Under Scott Pruitt, the EPA has collected, on average, 49 percent less in civil penalties against violators of federal environmental laws than in the first year of the previous three administrations, according to a new report from the nonprofit Environmental Integrity Project. Between January 20, 2017 and January 20, 2018, Trump's EPA lodged 48 civil cases and fined polluters \$30 million, excluding Superfund and criminal cases. When the numbers for previous administrations are adjusted for inflation, the difference becomes even more stark. Under Trump, polluters paid fines 57 to 68 percent lower than those under previous administrations. (from the Environmental Integrity Project) - [https://www.desmogblog.com/2018/02/15/trump-pruitt-first-year-epa-fining-polluters-49-percent-less?utm\\_source=dsb%20newsletter](https://www.desmogblog.com/2018/02/15/trump-pruitt-first-year-epa-fining-polluters-49-percent-less?utm_source=dsb%20newsletter)

However, Pruitt is in the process of [rolling back 67 environmental regulations](#) enacted under the Obama administration, which means there may be fewer violations but not necessarily less pollution released by companies in the future.

DRBC's proposed regulations clearly show the tremendous amount of people power and policing power that would have to go to this industry. We don't need this industry, we don't want the wastewater and we don't want freshwater used to harm families and communities in the shale zones.

- For example: DRBC's proposed monitoring and reporting for fracking does not include effluent limits. DRBC has no enforcement police. Just look at PA to see the regulators 10 steps behind the industry.
- DRBC sacrificing the tidal estuary to allow potential radioactive wastewater to be discharged with their regulations is not protecting the sensitive estuary species – like federally endangered atlantic sturgeon and the 9 other reproducing fish species that we know live and thrive in the improving tidal zones of the estuary. Why would the Governors allow those improvements of

---

U.S. EPA. Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-16/236F, 2016. Available at: [www.epa.gov/hfstudy](http://www.epa.gov/hfstudy) and <https://cfpub.epa.gov/ncea/hfstudy/recordisplay.cfm?deid=332990>; PADEP, accessed 10.25.2017 at: [http://files.dep.state.pa.us/OilGas/BOGM/BOGMPortalFiles/OilGasReports/Determination\\_Letters/Regional\\_Determination\\_Letters.pdf](http://files.dep.state.pa.us/OilGas/BOGM/BOGMPortalFiles/OilGasReports/Determination_Letters/Regional_Determination_Letters.pdf)

DO and recovering fish to be jeopardized to import frack wastewater? Its taken decades to clean up pollution in this zone and more improvements are underway with CSO controls and more --- we don't want wastewater from fracking.

- We know TDS and chlorides are wreaking havoc on our streams. The private community and del river watershed groups and DRBC have implemented DIY sensors to measure chlorides real time – salt spikes are already an issue from road salts – we don't want spikes from spills and wastewater too.
- In its national study on wastewater EPA identified 1,606 chemicals in fracking fluid or wastewater, yet only 173 had toxicity values from sources that met EPA standards for conducting risk assessments.

The last water pollution report published in PA showed over 19,000 stream miles are polluted – many of which from abandoned mine drainage. PA DEP's 2018 [Assessment and Listing Methodology for Integrated Water Quality Monitoring and Assessment Reporting](#) -- On Jan 25<sup>th</sup>, The Department of Environmental Protection announced the U.S. Environmental Protection Agency has approved its most recent [2016 Integrated Water Quality Monitoring and Assessment](#) showing 19,900 miles of rivers and streams in Pennsylvania are impaired/contaminated and do not meet federal water quality standards. Some of the most common pollutant sources are abandoned mine drainage, agriculture runoff, and urban stormwater runoff.

The report is a biennial comprehensive analysis of the water quality status of the more than 86,000 miles of streams and rivers and more than 160,000 acres of lakes in Pennsylvania.

The science is also bearing out the failure rate of gas wells to be in line with what geologists were predicting at the beginning of this Marcellus shale boom. Our groundwater aquifers are essential to rural communities and freshwater is finite. The life of the cement and steel casings is less than the life of an aquifer – we are digging the grave for our freshwater for future generations with a failure rate of 5-10%.

While we are making good strides on higher DO (dissolved oxygen) levels in the estuary after years of clean up – to think DRBC would consider wastewater disposal to strap the recovering system is a sham. Over 9 species of fish including the federally endangered atlantic sturgeon live in the estuary – we cannot regulate frackwaste discharges to this recovering system that has taken decades to clean up. Fish now migrate and thrive and reproduce in the tidal Delaware river and they deserve the same protections up river in the non tidal area of the watershed.

As we burn more climate change fracked gas and more gas pads replace forests in PA, heat sinks and heated temps increase and heated stormwater impacts DO and aquatic life. Therefore, a complete ban can do its part to not allow more methane gas contamination and the water quality impacts that come with it.

Economy – in the DR Watershed water supplies contribute 3.82 billion dollars annually to the regional economy.

Environmental rights.

“The people of Pennsylvania are entitled to clean water as a right under the state constitution. Strong water quality standards are essential for protecting this right by preventing dangerous pollution levels that impact people’s health and the quality of our lives, and that will ensure the protection of the natural resources we need and hold dear. This is an important opportunity for the people of Pennsylvania to speak up in their own defense and ensure that the state put in place strong protections that will serve the people, rather than allowing regulatory rollbacks that will make it easier for industry to inflict damaging pollution and harm,” said **Maya van Rossum, the Delaware Riverkeeper and leader of the Delaware Riverkeeper Network.**

But David Hess, a former DEP secretary who is now a lobbyist, said he believes the latest court ruling has the potential to force a much-needed reform in the state’s anemic funding for environmental preservation and protection. The state’s lawmakers have been balancing the budget with “bubble gum and baling wire” for the last 13 years, Hess said. And the money from gas leasing is just part of the problem. Environmental agencies are cut, and special funds tend to be viewed as easy marks for diversion. “The General Assembly isn’t going to change unless they are forced to,” Hess said. “They are loath to raise taxes, and they are loath to raise new revenue. They want the easy way out, and the easy way out is to patch together whatever they can steal where they can.”

[**Note:** The most recent example is from January when the Senate passed a bill to [finance more initiatives out of the Environmental Stewardship \(Growing Greener\) Fund](#), without adding any new money.]

In this environment we clearly cannot afford to open up the DRB to any gas drilling or its related activities.

Thank you for your time and consideration.

Faith Zerbe