Delaware River Frack Ban Coalition

Verbal Comments at September 9 DRBC Public Meeting

Banning Wastewater Produced by Fracking and Water Use for Fracking

1. This seems to be the last business meeting before you will issue the much-anticipated revised draft gas regulations, now due Nov. 30. Today you will hear from representatives of the Delaware River Frack Ban Coalition who are taking this opportunity to provide you, the DRBC Commissioners, the information needed to support a COMPLETE BAN on fracking operations in the Delaware River Watershed. That means banning the storage, processing and discharge of the wastewater produced by fracking, which would import toxic pollution, and the banning of the export of Delaware River water to fuel fracking outside of the basin, which would be unconscionable. Each coalition representative will be covering a specific issue related to fracking wastewater or water depletion.

   This morning I will focus on the impacts of the export of water from the watershed to feed fracking.

   Fracking requires enormous amounts of water to fracture a well, which is why the drilling industry is looking to the Delaware River Basin as an untapped source of fresh water. According to a report by Matt Kelso of FracTracker Alliance, the volume of water used in Pennsylvania's Marcellus has increased from an average of 4.3 million gallons in 2011 to 11.4 million gallons in 2017.[1] This is because drillers are using increasingly longer horizontal boreholes when they develop a shale gas well. Some well bores are longer than 4 miles, requiring 2-3 times more water. Additionally, drillers are using more water per lateral foot in some cases.[2]

   This has resulted a huge growing water demand by the fracking industry. The FracTracker report estimates "the industry used 51.4 billion gallons of water to stimulate 7,721 unconventional wells in Pennsylvania in the seven-year period from 2011 through 2017[3] and over 6 billion gallons in 2017 alone."[4]

   The strain of the withdrawal of so much water from streams and rivers has myriad impacts on the water quality and ecological health of those waterways. Approvals for water withdrawals by agencies, including DRBC, are based on a calculation using data from low flow periods, such as when there is little rainfall.

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[1] FracTracker Alliance, "Potential Impacts of Unconventional Oil and Gas on the Delaware River Basin", March 20, 2018. P. 6 of PDF. https://www.delawareriverkeeper.org/sites/default/files/FT-WhitePaper-DRB-2018%20%28003%29.pdf

[2] *Id.* p. 6 of PDF.

[3] *Id.* p. 7 of PDF

[4] *Id.* p. 13 of PDF

Scientists warn that using the low flow as a "pass-by flow" that is based on using the Q7-10 (the flow which occurs for a period of seven consecutive days one time in 10 years – considered "drought flow") is not adequate to protect waterways and the life that depends on them[5] and can be expected to cause direct harm to the habitats and water quality of the stream.[6] For example, up to 70 percent of water can be taken from small streams for well development during low flow conditions, even with a buffer built in.[7] This means doom for the life and quality of a stream, resulting in lower and more sluggish flows, negatively impacting many aquatic species. Additionally, the removal of water from aquifers or surface water bodies reduces the amount of fresh water available to dilute the input of pollutants. We won't let the watershed's streams be made into ditches, drained by the fracking industry.

This water withdrawal issue is compounded by the fact that the water used in fracking is never returned to the source, making this a "depletive use". That means the water is not used, cleaned, and restored to the waterway from which it was taken. The reason for this is two-fold: First, most of the water injected for fracking stays beneath the ground (from 8% to 30% returns, depending on the conditions) so is totally lost to the hydrologic cycle, a rare and deeply destructive occurrence. Secondly, the water is contaminated by fracking chemicals, proppants, and deep geology pollutants such as heavy metals, radioactive materials and salts that are picked up by the fracking process and brought to the surface. The water injected will never be restored to its same quality and chemical composition. It is lost forever, which means fracking's water use is simply not sustainable. If DRBC were to allow water withdrawals for fracking, it would be allowing the depletion of our most precious, irreplaceable and vulnerable asset – water, the basis for life here and throughout the globe.
Tracy Carluccio, Delaware Riverkeeper Network, Delaware River Frack Ban Coalition member

2. A new report "Fracking with Forever Chemicals" published by the Physicians for Social Responsibility, exposes that PFAS have been used extensively in drilling and fracking gas and oil wells and that the public is unaware of this pathway of pollution.[8] The data in the report shows PFAS, and/or substances that can degrade into PFAS have been used in fracking in more than 1,200 wells in six U.S. states between 2012 and 2020.[9] An analysis of public data by the

[5] Instream Flows for Riverine Resource Stewardship, Instream Flow Council, Cheyenne, Wyoming, 2004, page178
[6] Instream Flows for Riverine Resource Stewardship, Instream Flow Council, Cheyenne, Wyoming, 2004, page178-179
[7] https://www.delawareriverkeeper.org/sites/default/files/CNA%20Impacts%20in%20DRB.8.15.pdf

[8] https://www.psr.org/wp-content/uploads/2021/07/fracking-with-forever-chemicals.pdf
[9] *Id.*

Philadelphia Inquirer editorial board identified the use of one of these "forever chemicals" in at least eight Pennsylvania fracking wells between 2012 and 2014.[10] The "forever chemical" identified by the board is polytetrafluoroethylene, commonly known as Teflon — which PubChem reports is "reasonably anticipated to be a human carcinogen."[11]

PFAS are already a worldwide pollution problem of epic proportions as scientists and governments struggle to locate contamination and contain its spread. They are called "Forever Chemicals" because they never biodegrade and persist indefinitely in the environment. PFAS accumulate in the natural world and in the human body, are highly toxic even at very tiny doses, and are linked to several diseases and adverse health conditions, including cancers. The fetus, infants, children, women of childbearing age, and immune compromised individuals are the most vulnerable to PFAS health damages.

The U.S. Environmental Protection Agency (EPA) explains in its comprehensive report on wastewater produced by oil and gas extraction that fracking fluids and source geologic formation constituents end up in fracking wastes.[12] "Oil and Gas wastewaters contain a variety of chemicals, from sources such as HF fluid additives, well stimulation and well maintenance activities," states the report.[13] This means that the PFAS compounds used in fracking fluids can carry through to wastewater that would be transferred to the Delaware River Basin for disposal, if the DRBC were to allow frack wastewater to be imported and stored, processed, discharged or disposed here.
Sahana Rao, Natural Resources Defense Council, Delaware River Frack Ban Coalition member

3. EPA's 2018 oil and gas wastewater report delved into the impacts that treated fracking wastewater discharges are having on species living in waterways. EPA states that frack wastewater can negatively affect aquatic life and documents that with studies by scientists and PADEP. It was found in one study that juvenile federally listed northern riffleshell mussels (Epioblasma torulosa rangiana, in the Unionidae family) had very low survival rates when in waterways downstream of frack wastewater effluent discharges: ""Patnode et al. (2015) performed an in-situ study on the lethality of CWT effluent to juvenile unionid mussels, which are a federally listed endangered species. Using caged mussels at an array of sites downstream of a CWT facility, these authors found that mussel survival

[10] https://www.inquirer.com/opinion/editorials/fracking-pennsylvania-pfas-toxic-chemicals-water-20210805.html
[11] *Id.*
[12] U.S. Environmental Protection Agency (EPA), Engineering and Analysis Division, Office of Water, "Detailed Study of the Centralized Waste Treatment Point Source Category for Facilities Managing Oil and Gas Extraction Wastes", May 2018. EPA-821-R-18-004.
[13] *Id.* p. 9-36.

decreased significantly at sites with high specific conductivity related to the CWT discharge."[14] It was also found that there was less diversity and abundance of mussels in CWT discharge downstream locations than in upstream locations.[15]

The same EPA report included a study from PA DEP that documented macroinvertebrates and phytoplankton upstream of CWT discharges contained a higher percentage of pollution-intolerant macroinvertebrate species compared to pollution-tolerant species. Downstream of brine discharges (Short et al., 1991) and CWT facilities (PA DEP, 2009, 2013) showed reduce species richness and contained a higher percentage of pollution-tolerant compared to pollution-intolerant species.[16] It is clear that aquatic life is being impacted by the discharge of wastewater being discharged in Pennsylvania, despite meeting current treatment standards. This is a red flag that has not been noticed by the agency since this finding has not informed policy or regulations regarding fracking wastewater discharges in the Commonwealth. If fracking wastewater is imported from Pennsylvania to the Delaware River watershed for storage or disposal these unsolved pollution problems will come with it. In DRBC's 2017 draft gas regulations, there was no treatment offered that would eliminate these impacts on aquatic life. This is because fracking wastewater cannot be processed to standards that protect aquatic life.

Megan Steele, New Jersey Sierra Club, Delaware River Frack Ban Coalition member

4. The Delaware Estuary and Bay are vital economic resources for Delaware. Beach activities, bird-watching, sport fishing and observing marine mammals near the mouth of the Delaware Bay all attract large numbers of tourists, while harvesting oysters, crabs and other aquatic species are important industries in the estuary.

   The outstanding biological diversity of the Delaware River Estuary and Bay bring tourists from around the world. It also supports vital industries such as the harvesting of oysters, crabs and other aquatic industries. that our vital to our economy.

   Allowing fracking wastes to enter the river upstream will inevitably affect the ecology of the Delaware Estuary and Bay. There are numerous classes of chemicals in water used in fracking that can be toxic to insects and fish: Heavy metals are toxic to almost all animals in high concentrations. Treatments used for industrial wastes may remove large amounts of heavy metals, but leave enough

[14] *Id.* p. 9-27.
[15] *Id.* p. 9-27.
[16] *Id.* p. 9-26.

to cause cumulative damage to insects and fish. At lower concentrations they can be taken up by insects and other aquatic species eaten by fish.

The vast number and nature of organic materials in fracking wastes require daunting work to identify species present and assess their toxicity. For example, a variety of biocides may be added to fracking mixtures. Under the conditions present in deep well fracking, many are transformed into new materials with different degrees of toxicity.[17]

Polycyclic aromatic hydrocarbons such as naphthalene are present in gas and oil deposits and may also be added to fracking fluids. They are toxic in various degrees to a wide variety of fish and insects, particularly in the embryonic, larval and juvenile stages.[18] Organic compounds are not removed during waste treatmen.

Allowing untreated water from spills or partially-treated water from sewage plants and industrial waste treatment plants to enter the Delaware River will inevitably disturb the biological balance and decrease biodiversity in the river.

These negative effects will be reflected in the health of the estuary and bay, limiting the food supply available for predator fish and birds and causing toxic organic compounds, heavy metals and radionuclides to bio-accumulate in important species. Radium attaches to sediment in the river.[19] It will eventually accumulate in the Delaware Estuary and the 100-foot depths of the Delaware Bay. With a half-life of 1600 years, radium-226 will pollute this vital resource for centuries, and even millennia, to come.

That is why fracking wastes should not be allowed in the Delaware River Basin. **Coralie Pryde, League of Women Voters of Delaware, Delaware River Frack Ban Coalition member**

5. The Marcellus shale formation is one of the most radioactive of shale deposits. In fact, according to comparisons of Radium-226 and 228[20] of produced wastewater

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[17] *Environ. Sci. Technol.* 2015, 49, 1, 16–32" "Biocides in Hydraulic Fracturing Fluids: A Critical Review of Their Usage, Mobility, Degradation, and Toxicity, 5et al, Nov 25, 2014. https://pubs.acs.org/doi/10.1021/es503724k

[18] Transactions of the American Fisheries Society, 113 (1), 1984. Pages 74-85,"Comparative Acute Toxicity to Aquatic Organisms of Components of Coal-Derived Synthetic Fuels", R.E.Milleman. https://www.tandfonline.com/doi/abs/10.1577/1548-8659%281984%29113%3C74%3ACATTAO%3E2.0.CO%3B2

https://doi.org/10.1577/1548-8659(1984)113<74:CATTAO>2.0.CO;2

[19] https://cen.acs.org/articles/96/web/2018/02/Oil-gas-wastewater-leaves-radium.html
"High levels of radium found downstream of treatment plants years after fracking wastewater disposal reportedly ended"

[20] Nobel, Justin. PowerPoint presentation, slide 9 "HOW RADIOACTIVE ARE US OIL & GAS PLAYS?" "Radioactivity in Fracking: Too Hot to Handle": https://youtu.be/taxSr4ZPjuw

or flowback (also called “brine”) from shale deposits across the nation, Marcellus formation brine has the highest levels - at 28,500 picocuries per Liter, according to PA Department of Environmental Protection[21]. U.S. Nuclear Regulatory Commission requires industrial discharges to remain below 60 picocuries per Liter for both forms of Radium and the EPA has a combined radium 226/228 of 5 pCi/L for drinking water[22]. [See MAP included in presentation]

That Radium-226, has a half-life of 1600 years, means that it will be present in the environment for thousands of years, and has dangerous human health effects, including cancer. - and note that Radium degrades to Radon, which has widely recognized health impacts.[23] [24] It is also water soluble, especially in high salt, meaning it easily travels with the salty wastewater.[25]

Pressure from deep within the earth in the oil gas formation layers, where the radioactive material is naturally occurring, forces the material to the surface with the gas and brine. From the wellhead, the radioactive wastewater is transported to wherever it is discharged, which would be the Delaware River Watershed if the DRBC were to allow drilling wastewater to be imported, stored, processed, discharged or disposed of here.

Conventional drilling has been shown, similar to fracking, to release radioactive wastewater[26] - and there is no way to know exactly where the waste come from so the ‘only fracking’ designation does not mean much. With that import, additionally, illegal dumping, accidents and spills are inevitable.

Despite the scientific evidence, the radioactivity of drilling waste is largely unrecognized by regulators and the public. A report released in July by NRDC and Justin Nobel’s power point that has been submitted [13] show how the glaring lack of regulation of gas and oil extraction activities is endangering workers,

[21] Pennsylvania Department of Environmental Protection, Technologically Enhanced Naturally Occurring Radioactivity Materials Study Report, 2016

[22] https://www.epa.gov/dwreginfo/radionuclides-rule

[23] https://www.epa.gov/radiation/radionuclide-basics-radium

[24] https://www.atsdr.cdc.gov/csem/radon/health_effects.html

[25] Resnikoff, Marvin. “Review of Pennsylvania Department of Environmental Protection Technologically Enhanced Naturally Occurring Radioactivity Materials (TENORM) Study Report”, Dec. 2015.

[26] https://stateimpact.npr.org/pennsylvania/2018/01/20/study-conventional-drilling-waste-responsible-for-radioactivity-spike-in-rivers/ and specifically, https://pubmed.ncbi.nlm.nih.gov/29300469/ Based on these variations, we concluded that recent disposal of treated conventional OGW is the source of high Ra in stream sediments at CWT facility disposal sites. Consequently, policies pertaining to the disposal of only unconventional fluids are not adequate in preventing radioactive contamination in sediments at disposal sites, and the permission to release treated Ra-rich conventional OGW through CWT facilities should be reconsidered.

nearby communities, and the environment due to its radioactivity.[27] The disposal of this radioactive wastewater is mishandled due to federal and state loopholes and exemptions that shield the companies from liability[28]. NRDC's report provides scientific research documenting high levels of radioactive materials from drilling are being released into the environment in Pennsylvania and other states.[29]

Even small increased exposure to radioactivity can have adverse health effects, according to a study done on young patients with Ewing's sarcoma in Canada.[30] Considerable medical studies point to exposure to "… *increased amounts of radioactivity may produce, over a number of years, malignancy...".* -this, besides the effects of the other toxic components in the waste.[31]

For example, in Justin Nobel's PowerPoint presentation[32] he quotes Dr. Harrison Martland, author of "The Occurrence of Malignancy in Radio-Active Persons" : *"I am now of the opinion that the normal radioactivity of the human body should not be increased, strongly presuming that increased amounts of radioactivity may produce, over a number of years, malignancy...".* Nobel points out, "Martland, as Chief Medical Examiner of Essex County New Jersey - did autopsies on 18 of the "radium girls" and is regarded as one of the founders of occupational radiation health".[33]

The DRBC must ban the import of drilling waste and the export of water for drilling elsewhere.

Barbara Arrindell, Damascus Citizens for Sustainability, Delaware River Frack Ban Coalition member

Slide shared during the public comment follows here:

[27] Mall, Amy, Alemayehu, Bemnet. "A Hot Fracking Mess: How the Lack of Regulation of Oil and Gas Production Leads to Radioactive Waste in Our Water, Air, and Communities", Natural Resources Defense Council, July 21, 2021.

[28] https://www.damascuscitizensforsustainability.org/2019/10/14/loopholes-for-polluters/

[29] *Id.*

[30] "Radium in drinking water and the risk of death from bone cancer among Ontario youths" Dr. Murray M. Finkelstein. Canadian Medical Association Journal, 1994.

[31] https://www.sciencedirect.com/science/article/pii/S0160412018322487

[32] Nobel, Justin. PowerPoint presentation, Slide 24, "Radioactivity in Fracking: Too Hot to Handle": https://youtu.be/taxSr4ZPjuw

[33] *Id.*

6. EPA states in its 2018 frack waste treatment report that wastewater produced by oil and gas development is being treated and discharged at permitted centralized waste treatment (CWT) facilities today and that the pollution in the treated discharge is having harmful impacts at the stream and watershed level. The report found that scientific investigations in Pennsylvania of the downstream surface water quality and sediments show that the discharges have caused pollution plumes in these streams and that dangerous levels of contaminants have accumulated in the stream's sediments.[34] In its report, EPA says many of the constituents identified are pollutants of concern and have negative human health effects including "TDS; halides (e.g., bromide, chloride, and iodide); metals; technologically enhanced naturally occurring radioactive materials (TENORM); and a wide range of poorly characterized chemicals in injected fluids including surfactants, biocides, wetting agents, scale inhibitors, and organic compounds".[35]

[34] U.S. Environmental Protection Agency (EPA), Engineering and Analysis Division, Office of Water, "Detailed Study of the Centralized Waste Treatment Point Source Category for Facilities Managing Oil and Gas Extraction Wastes", May 2018. EPA-821-R-18-004.
[35] *Id.* p. 9-1

The EPA report continues: “In many instances, downstream concentrations exceed applicable aquatic and/or drinking water thresholds, indicating that the elevated downstream concentrations can negatively affect human health or aquatic life”.[36]

The report also confirms the presence of halides – including bromide and chloride – in discharged wastewater from oil and gas extraction wells processed to current standards. “Documented increases in bromide concentrations in rivers receiving CWT effluent, combined with the known human health effects of brominated THMs in drinking water, demonstrate that CWT effluent poses human health risks related to drinking water contamination. In watersheds where O&G activities are active and CWT facilities are present, studies have shown evidence of a shift in surface water ionic composition toward relatively greater amounts of bromide (McTigue et al., 2014).”[37]

Doug O’Malley, Environment New Jersey, Delaware River Frack Ban Coalition member

7. According to EPA’s study spills and pollution releases occur during transportation of wastewater. EPA documents that these releases have negative impacts on water quality and aquatic life; the harm can persist for years after a spill. From the report: “Another pathway for environmental releases of pollutants from disposal of O&G wastewater at CWTs is the potential for spills of wastewater during transportation from O&G wells or at treatment facilities. Spills of untreated wastewaters can negatively impact water quality and aquatic life, and those impacts can persist in the environment for years. Flowback water spills in the Marcellus Shale region have been shown to negatively impact aquatic life including fish and macroinvertebrates (Grant et al., 2016).”[38]

   EPA also states that studies show that the likelihood of spills increase as the volume of wastewater and number of trips increase: “The likelihood of spills during transportation increases as the volume of wastewater and number of trips increases (Belcher and Resnikoff, 2013; Rahm et al., 2013; Hansen, 2014)”.[39] In the Marcellus shale, fracking a gas well uses an average 11.4 million gallons of water today and subsequently produces more wastewater.[40] The deeper Utica formation uses even more. The new supersized fracked gas wells in these formations are drilling horizontal wellbores up to 4 miles long[41]. That translates to at least 1-1.5 million gallons of wastewater for a 10M gallon fracking operation,

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[36] *Id.* p. 9-18
[37] *Id.* p. 9-23-24
[38] *Id.* p. 9-8.
[39] *Id.* p. 9-8.
[40] FracTracker Alliance, “Potential Impacts of Unconventional Oil and Gas on the Delaware River Basin”, March 20, 2018. https://www.delawareriverkeeper.org/sites/default/files/FT-WhitePaper-DRB-2018%20%28003%29.pdf
[41] http://www.post-gazette.com/powersource/companies/2018/01/15/These-days-oil-and-gas-companies-are-super-sizing-their-well-pads/stories/201801140023

an increase per well of two to three times over – a new glut of wastewater that has to go somewhere. This is a major reason there is pressure from industry to open up the Delaware River watershed to wastewater produced by fracking – they have huge volumes to get rid of and are running out of places to take it.

In addition to the increased pressure for huge volumes of wastewater looking for a place to go, the increased transport, storage, and handling of wastewater means more opportunity for spills and accidents that result in uncontrolled releases of this highly contaminated waste. EPA in their 2018 report cites a study that says wastewater is one of the top three materials spilled in fracking activities.[42] This means substantial risk of pollution from spills and accidents if wastewater were to be imported into the Delaware River Basin for storage, treatment and disposal.

Eric Benson, Clean Water Action, Delaware River Frack Ban Coalition member

8. An article published this spring by author and Pennsylvania resident Eliza Griswold examines how wastewater produced by fracking is endangering the health of residents, focusing on children who have developed a rare form of cancer. ("When the Kids Started Getting Sick" at https://www.newyorker.com/news/dispatch/when-the-kids-started-getting-sick) From the article:

> *The problem posed by fracking waste in the region's waterways came to the public's attention in 2008, when the Monongahela River, which provides drinking water to some three hundred thousand people, suddenly acquired a salty taste. It turned out that waste haulers were trucking millions of gallons of fracking wastewater to municipal sewage plants along the river…Many of these towns were poor and welcomed the cash that they received from fracking companies for taking the waste, until they realized that their facilities could not properly process it before sending it into the river."*

DRBC is considering allowing frack wastewater to be imported into the Delaware River basin. While the last iteration of draft gas rules had requirements for waste treatment at industrial processing plants, not sewage treatment plants, the draft regulations did not contain safeguards that would keep many of the same pollutants that Eliza Griswold mentions out of our river and streams. Salts, chemicals, and radioactive elements are still going to be discharged, partly due to the inability of these processing plants to treat them, such as radioactive elements; partly due to not knowing what toxics are in the waste so they slip

[42] U.S. Environmental Protection Agency (EPA), Engineering and Analysis Division, Office of Water, "Detailed Study of the Centralized Waste Treatment Point Source Category for Facilities Managing Oil and Gas Extraction Wastes", May 2018. EPA-821-R-18-004. p. 9-8.

through the cracks, due to trade secrets; and partly because some reaches of the Delaware River are not protected adequately.

> *"On February 13, 2019, WPXI, a local TV station, aired the first story on Ewing's sarcoma cases among young people in Washington County. Soon after, David Templeton and Don Hopey, reporters at the Pittsburgh Post-Gazette, documented at least twenty-seven cases of Ewing's diagnosed between 2008 and 2018 across Washington, Greene, Westmoreland, and Fayette Counties. Templeton and Hopey raised the possibility that the cancers could be caused by radioactive fracking waste in the water."*

Ewing's Sarcoma, a form of cancer linked to radioactivity, has afflicted young people in one of the most intensely fracked areas of Pennsylvania. Investigators suspect exposure to fracking wastewater is a potential source. PA Governor Tom Wolf ordered a $3million dollar study into the Ewing's Sarcoma cluster but it is unclear if radioactive fracking wastewater will be part of the study's scope.
The biggest lesson so far from this health nightmare can be summed up by one of the parents, Gerald Jackson, speaking to Griswold:

> *In 2011, his son, Casey, a soldier in the Army, had been diagnosed with Ewing's sarcoma. He passed away the next year, at age twenty-one…"What do you say when your son tells you he is scared of dying?" he asked me. "There are no words for that."*

And as a supervisor for a town on the Monongahela River that refused to continue to take fracking wastewater due to the local cancers said to Griswold in 2019, "No amount of money was worth kids' health".
Wes Gillingham, Catskill Mountainkeeper, Delaware River Frack Ban Coalition member

9. I was looking for comments from the Commissioners connecting Hurricane Ida, climate change, and the need for action. My own governor, Tom Wolf, had nothing to say on the subject, but others did. The clearest call to action came from Governor Murphy who said that the world is changing and "our whole mindset, the playbook that we use," must change too. "We have got to leap forward and get out ahead of this."

   The way to get ahead of this is to get ahead of this.

   Quoting from the Philadelphia Inquirer, "During Ida, the Schuylkill at 30th Street Station in Philadelphia rose to 16.28 feet. Flood stage is nine feet, and 14 feet is considered a major flood. The average flow at the location is 1,460 cubic feet per second. It reached a flow of 125,000 cubic feet per second [last] Thursday.

Dozens of sewage and storm-water pipes overflowed, emptying untreated water directly into Philadelphia's major waterways. So if you saw pictures on social media of people diving into the water and paddling around for fun, they were almost assuredly swimming in diluted sewage." And that's just Philadelphia.

It is an understatement to say that Ida took a toll on the water resources of the Delaware River Basin.

You are considering regulations that would enable the industry that is killing us. There are only 2 things the fracking industry needs right now – 1) more water, and lots of it, to frack up communities in my state and others and 2) more places to dump their waste. The regulations you are considering would give the industry both of those things. The result of giving them those things would be to ensure storms like Ida that would become increasingly intense and frequent.
According to the New York Times, Ida shattered the record for rainfall in a single hour in Central Park. The record it shattered was set days earlier by Tropical Storm Henri.

Records are already being broken way too fast.

But the even crazier part is that, as ever-more intense storms would be coming with ever-greater frequency, the industry would be depriving the basin of clean water and exposing it to contamination from imported wastewater at the same time.

Approve the regulations you are now considering and you will think back to managing the water resources of the Delaware River Basin in the aftermath of Ida as the good old days.

You want to get out ahead of it? Get ahead of it. Ban water withdrawals and the importing of waste from drilling and fracking. Make the ban on fracking the full ban we need.
Karen Feridun, Founder, Berks Gas Truth, Delaware River Frack Ban Coalition member

10. Complete ban on fracking and its activities: a ban on the storage, processing and discharge of the wastewater produced by fracking and a ban on the export of Delaware River Watershed water for fracking outside of the basin. **Eric Weltman, Food and Water Action, Delaware River Frack Ban Coalition member**