



April 26, 2022

Re: Proposed Rulemaking: Safe Drinking Water PFAS MCL Rule (#7-569)

Delaware Riverkeeper Network (DRN) submits these written comments in addition to verbal testimony presented at the Public Hearing at 1:00 pm on March 21, 2022. DRN also incorporates other submissions made to PADEP and the EQB by reference.

Article I, Section 27 of the Pennsylvania Constitution, also known as the Environmental Rights Amendment (ERA), guarantees the following:

The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and aesthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.

Under Section 27, the Commonwealth, including PADEP, must prevent both direct and indirect harm to the peoples' environmental rights, prohibit direct and indirect harm to Pennsylvania's natural resources, and act affirmatively through legislation to protect environmental rights. *Robinson Township, Delaware Riverkeeper Network et al. v. Com.*, 83 A.3d at 951-52, 957-58. In addition to the requirement to take affirmative action, the Commonwealth must also "refrain from permitting or encouraging the degradation, diminution, or depletion of public natural resources. *Id.* at 957. This "prohibitory" duty applies both when state action directly depletes the resources and when state inaction directly allows the same. *Id.* Pennsylvania has reaffirmed the application of the ERA to drinking water by declaring that an "adequate supply of safe, pure drinking water is essential to the public health, safety and welfare and that such supply is an important natural resource[.]" 35 P.S. § 721.2(a)(1).

The regulation, treatment, and remediation of drinking water to remove PFOAs will also have the ancillary benefits of addressing the ongoing degradation of groundwater, surface water, soil, and the environment, all of which are part of the "corpus" of the trust that is protected by the ERA. Given that PADEP is required to act exclusively in the beneficiaries' interests and cannot "place [itself] in a position that is inconsistent with the interests of the trust," it would be directly contrary

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to the requirements of the ERA for PADEP to sit idly by and allow the continued degradation of so many of Pennsylvania's public natural resources. Here, it is abundantly clear that the Environmental Rights Amendment requires PADEP act to regulate PFAS in the drinking water of the Commonwealth.

Delaware Riverkeeper Network supports the greatest protection that can be attained for all people through the adoption and implementation of strict safe drinking water standards or maximum contaminant levels (MCLs) for PFAS in Pennsylvania's drinking water. DRN supports that Pennsylvania move ahead to establish and enforce MCLs for both PFOA and PFOS, in addition to other PFAS, and to do so as quickly as possible. Drinking water is the major exposure route for PFAS for humans and is therefore the greatest regulatory priority. DEP and the Environmental Quality Board (EQB) must avoid any further delay in providing this most essential protection for all Pennsylvanians, as mandated by the Pennsylvania Constitution.

DRN advocates changes to the proposed rulemaking to make the standards more protective and the regulations as fair and effective as possible, consistent with the requirements of the Environmental Rights Amendment.

Stricter, More Protective MCLs Required

EQB Proposal: The rulemaking proposes an MCL of 14 parts per trillion (ppt) for PFOA and 18 ppt for PFOS.

DRN proposal: The proposed MCL standards for PFOA (14 ppt) and PFOS (18 ppt) are not strict enough to protect young children. The PFOA MCL should be 1 ppt but not exceed 6 ppt while the PFOS MCL should be no greater than 5 ppt. When PFOA and PFOS are found combined in water, their combined concentration in water supplies should be no higher than 13 ng/L.ⁱ Because PFOA and PFOS are linked to developmental effects, they should be removed to as low a level as possible.ⁱⁱ This is why DRN unequivocally supports complete removal from drinking water. Currently available treatment technologies are capable of removing PFOA and PFOS to non-detect levels if operated and maintained properly. The adoption of MCLs of between 1 and 6 ppt for PFOA and no greater than 5 ppt for PFOS will ensure that if these PFAS are found in the drinking water at or above these concentrations, they will be removed. Treatment technologies that attain non-detect levels of PFAS recommended by Cambridge Environmental Consulting include granular activated carbon and reverse osmosis—both of which are readily available and in use across the nation today for a suite of contaminants, including PFAS.ⁱⁱⁱ

Additionally, the "MCL Goals" (MCLGs) recommended by the toxicology report performed by Drexel University for Pennsylvania Department of Environmental Protection (DEP) were 8 ppt for PFOA and 14 ppt for PFOS, based on their independent study.^{iv} DEP relaxed these standards to 14 ppt for PFOA and 18 ppt for PFOS in the proposed rulemaking^v, rationalizing that cost must be a considered factor.^{vi} In the proposed rulemaking, EQB recognizes the adverse health effects of people being exposed to PFOA and PFOS in their drinking water and the benefits of protection afforded by treating drinking water to comply with MCLs. To fulfill its statutory and constitutional responsibility to provide clean drinking water, MCLs must be protective of Pennsylvanian's health,

first and foremost, and should be based on lifetime health effects that are arrived at based on science, not financial considerations.

DRN supports the strict MCLs arrived at by Cambridge Environmental Consultants for PFOA and PFOS and we also criticize DEP for relaxing the proposed standards from the Drexel PFAS Advisory Group's (DPAG) MCLGs based on cost. The full brunt of the externalized costs of not providing the strictest MCLs are not considered in the analysis performed by DEP. In fact, there is no attempt to assess the cost to individuals, families, or communities of the costs of dealing with health impacts from PFAS exposure, the loss of health and work ability, the loss of quality of life, longevity and the loss of life experienced by those who develop conditions or diseases linked to PFOA and PFOS exposure. The unjust dismissal of these costs borne by the public makes any attempt to quantify costs associated with implementing MCLs fatally flawed.

Even if DEP attempted to fairly assess the costs of adopting MCLs, however, their duty to carry out their constitutional obligation to protect Pennsylvanians takes precedence, negating the purported need that DEP consider costs, as DEP claims the federal rules require. As DRN stated in its "Response to DEP" regarding the agency's review of DRN's Petition for Rulemaking to set an MCL for PFOA:

"Under the Supreme Court's holding, there are two basic duties on the Commonwealth as a trustee. 'First, the Commonwealth has a duty to prohibit the degradation, diminution, and depletion of our public natural resources, whether these harms might result from direct state action or from the actions of private parties. Second, the Commonwealth must act affirmatively via legislative action to protect the environment.'^{vii} There exists no similar constitutional provision, law, or regulation at the federal level. This means that while DEP is correct in that it must make the same considerations as U.S. EPA in setting an MCL under the Federal Safe Drinking Water Act, it must also adhere to constitutional obligations that U.S. EPA does not have.

These requirements must be in the forefront of DEP's mind while it makes its MCLG recommendation to the EQB. Once the MCLG has been established, DEP will need to establish an enforceable standard, the MCL. At the federal level, EPA then takes cost into consideration through preparing a health risk reduction and cost analysis in support of any standard.^{viii} 'Where the benefits of a new MCL do not justify the costs, EPA may adjust the MCL for a particular class or group of systems to a level that maximizes health risk reduction benefits at a cost that is justified by the benefits.'^{ix} For DEP, however, although cost is a consideration that may be taken in setting an MCL, it has a constitutional obligation to take affirmative action to protect the Commonwealth's right to pure water. Thus, the affirmative duty to protect the environment and prohibit the diminution of our public natural resources is a factor that must be given greater weight in setting an MCL than the weight afforded to the cost of the regulation. As a result, DEP has an even greater obligation to protect the environment than U.S. EPA does, and the deliberative process in setting an MCL for PFOA must reflect that."^x

More PFAS must be Included

EQB Proposal: MCLs are being proposed only for PFOA and PFOS.

DRN proposal: MCLs should be proposed for more PFAS compounds, at least including all eight of the PFAS compounds for which DEP has sampled and found in the state's water. DEP has not conducted wide sampling across Pennsylvania's geographic expanse and only conducted two sampling rounds. There are approximately 9,200 public water systems in Pennsylvania. Of the 114 Pennsylvania water systems sampled, about one third contained PFAS. Locations where PFAS were found must be seen in this context – that of the limited sampling that has been done, eight PFAS were found in one third of the systems. If the percentage holds, the number of systems that could contain PFAS is enormous – perhaps more than 3,000 – meaning huge numbers of people could be drinking water contaminated with PFAS. It makes the most sense to include at least all PFAS already found, to remove these dangerous compounds that we know are present.

In March 2021, USGS and DEP collaborated on the sampling of raw untreated surface water at DEP "Surface Water Quality Network" sites. They tested for 33 PFAS chemicals and 18 PFAS precursors. The data showed results below the EPA HAL but was not explained in terms of detections above the proposed MCLs from PFOA and PFOAS or in light of the recommended MCLGs from the DPAG. We do know that surface water has been contaminated by stormwater runoff from facilities across Pennsylvania. Sampling related to uncontrolled stormwater leaving the military bases in Bucks County was a source of extremely high levels of PFAS for years and is finally being addressed by stormwater permitting restrictions set by PADEP. How well these permit requirements are working is unknown and questionable; surface water sampling is ongoing. Evidence of continuing high levels of PFAS in the Neshaminy Creek, for instance, illustrates an out-of-control pollution problem that has led to fish flesh contamination. In December 2020, DEP issued a "Do Not Eat" advisory for all fish in the Neshaminy Creek due to high levels of PFOS contamination.^{xi} The Creek receives PFAS contaminated surface water from military bases through upstream feeder streams. The Neshaminy Creek is the source of drinking water for downstream residents, including Aqua America who wheels water to several locations not obviously local to the military bases.^{xii} The creek flows to the Delaware River upstream of Philadelphia and the drinking water supplies for millions of people. This is an illustration of PFAS contamination occurring far from the original source and impacting many environmental media and seemingly unrelated drinking water supplies as the pollution plume spreads. It also illustrates the intransigent nature of these "Forever Chemicals" that are persistent, highly mobile in the environment and bioaccumulative in organisms, making them an incalculable threat.

Drinking water sampling was first done by DEP in 2019 for only six PFAS compounds: PFOS, PFOA, PFNA, PFHxS, PFHpA, and PFBS. DRN complained about the scant number since EPA Method 537.1 was available for analyzing 18 PFAS compounds at the time. DEP did expand to 18 PFAS in 2020-2021 and the 2019 sites were resampled for all 18. PFHxA, PFUnA, PFBS, PFHpA, PFHxS, PFNA, PFOA and PFOS were all found in drinking water sources. The most common was PFOA and PFOS, which requires that they both be included in the MCL rulemaking but DEP has

no reasonable excuse to not include the others, all of which are known to have adverse health effects.

If the full list of PFAS found in Pennsylvania is not included in the rulemaking process, at the very least DEP should include the PFAS that the DPAG assessed in their analysis and report. That includes PFNA, PFHxS, PFHpA, PFBS, and GenX (HFPO-DA). The risk assessment has been done by DPAG and MCLGs were recommended. Why isn't DEP proposing standards for these PFAS, giving the public the opportunity to consider and give input into what the most protective MCLs would be for these additional five PFAS? These PFAS compounds have known health effects, do not belong in our water, and should be removed from our drinking water.

The PFAS Pilot Health Study ("PEATT Study") in Bucks and Montgomery Counties is another important guide for what compounds should be included in the MCL rulemaking. This study found PFOA, PFOS, PFNA and PFHxS consistently detected in the blood samples of the study participants. Another seven PFAS compounds were detected but in a smaller number of participants. The average levels of PFOA, PFOS, PFHxS and PFNA among the study participants exceeded the national average, sending shock waves through the communities in the affected region.^{xiii} The final study results were published in 2019.^{xiv} The region is currently part of a national multi-site study being conducted by CDC and ATSDR^{xv} examining the health of residents in the Horsham, Warrington and Warminster areas who have been drinking water containing PFAS.^{xvi} The fact that PFNA and PFHxS were found at higher concentrations than the general population in the blood samples of people in this region around the military bases should not only shock the public but should be an alarm bell that moves DEP and EQB energetically to add MCLs for these two compounds to this rulemaking.

Both PFNA and PFHxS are known to be linked to adverse health effects. PFNA is one of the most toxic PFAS because it has a longer carbon chain than PFOA or PFOS – a total of nine. This makes PFNA more toxic in lower doses than the other PFAS compounds that have fewer carbons in the chain. PFNA MCLs have been adopted by some states, including New Jersey.^{xvii} DRN participated in the public process for the rulemaking that resulted in New Jersey being the first state in the nation to adopt any MCL for any PFAS compound. The extremely high concentrations of PFNA in water supplies for New Jersey Delaware River communities led to a water emergency and government action, on urgent footing at the local level and eventually at the state level. The crisis resulted in regulatory actions, eventually including MCLs for three PFAS.

When New Jersey's Drinking Water Quality Institute (DWQI) recommended a PFNA MCL, DRN commissioned an analysis and risk assessment from Cambridge Environmental Consulting. The independent toxicology report from Cambridge recommended an MCL of 3 to 5 ppt for PFNA to protect the fetus and young children, who can suffer developmental damage that lasts a lifetime or develop disease later in life because of the early exposure. DRN advocated for the MCL of 3 to 5 ppt but NJ adopted an MCL of 13 ppt.^{xviii} DRN supports an MCL for PFNA of 3 to 5 ppt in Pennsylvania for all water supplies. There is a trove of information in the DWQI basis and background document and among scientists and government agencies about PFNA's toxic properties and the diseases with which it is linked.^{xix} There is no excuse for Pennsylvania not to include PFNA in this rulemaking, especially considering that the Drexel Group included it and

issued an MCLG.^{xx} PFNA is in Pennsylvania's drinking water, it is in the blood of Pennsylvania residents who have been sampled, it is known to be highly toxic, is regulated by other states, and is well studied by the scientific and health community. PADEP and the EQB must include PFNA in this rulemaking to mandate its removal from drinking water in Pennsylvania.

PFHxS is known to build up in the body, is toxic and linked to adverse health effects.^{xxi} It has seven carbons in the chain, classifying it as a "long-chain" PFAS. The Stockholm Convention is considering adding PFHxS to its list of Persistent Organic Pollutants.^{xxii} The Stockholm Convention is an international agreement adopted by nations from throughout the world. Persistent Organic Pollutants are listed with a goal of reducing or eliminating use and production. PFOS, its salts and PFOSF and PFOA, its salts and related substances are listed.^{xxiii} A study of maternal cord blood found PFHxS in >90% of samples taken of women in Canada.^{xxiv} The DPAG included PFHxS in its analysis and recommended an MCLG. Whether or not the MCLG is sufficiently protective could be reviewed during the public process. The importance of regulating PFHxS is clear to require its removal from Pennsylvania drinking water; PADEP and the EQB must add PFHxS to the rulemaking.

All Water Users Need Protection, including those using Private Water Well Supplies

EQB Proposal: The MCL rulemaking applies only to Public Water Systems, excluding private water wells.

DRN Proposal: The rulemaking leaves one-quarter to one-third of Pennsylvanians out of the program. It should be amended to include all private water users in order to be fair and provide equal protection under Article 1 Section 27 of the Pennsylvania Constitution. About 3.5 million people get their water from private wells and an unknown additional number use springs or other types of water sources that are not connected to public systems. Penn State Extension reports that about 20,000 new water wells are drilled each year. These water users are just as vulnerable to PFAS water contamination because of how easily PFAS spreads and how ubiquitous these compounds are in our environment.

It is known that private water wells have been contaminated with PFAS in Pennsylvania. At the start of 2017, 22 public drinking water wells and 230 private drinking water wells were shut down by a variety of agencies because they exceeded the 70 ppt EPA HAL in Warminster, Warrington and Horsham Townships, impacted by the military bases in Bucks and Montgomery Counties. Treatment of private water wells to remove dangerous concentrations of PFOA and PFOS is an ongoing issue there as the military samples wells within an expanding groundwater pollution plume that includes many privately owned and operated water wells.

Further evidence that individual private wells are at risk of PFAS contamination is the PFAS Pilot Health Study ("PEATT Study") in Bucks and Montgomery Counties, which reported that people with private wells had higher levels of PFAS in their blood than those on public water supplies. A study released this year by the US Geological Survey and published in Environmental Science and Technology detected PFAS chemicals in 20% of private wells and 60% of public wells sampled in 16 eastern states.^{xxv}

Additionally, due to a lack of statewide private water well construction regulations in Pennsylvania, there is no comprehensive database or map of all private water sources. So, there is no way to know how closely private water sources are located to potential sources of contamination. By including all private water supplies, the risk of being unknowingly exposed to these toxic compounds will be substantially reduced. Uses of PFAS or pre-cursor PFAS can release pollution in unexpected locations. As discussed elsewhere in this comment, many geographic regions have yet to be sampled; it is unreasonable to assume that these regions do not have PFAS-contaminated groundwater or surface water.

In February of this year, USGS published recent findings from sampling groundwater in Delaware.^{xxvi} They found widespread presence of PFAS compounds in Delaware's Columbia Aquifer, a source of drinking water for Delaware, Maryland, New Jersey, New York, North Carolina and Virginia. Both public and private water supplies are drawn from this aquifer. Because groundwater is accessed as a water supply by private wells as well as public water systems, USGS recommends that private water wells be tested for PFAS.

Uses that may not obviously involve PFAS or precursors to PFAS occur in Pennsylvania as well and can result in PFAS showing up in unexpected locations. A 2021 report "Fracking with Forever Chemicals" published by the Physicians for Social Responsibility, exposed that PFAS have been used extensively in drilling and fracking gas and oil wells.^{xxvii} Subsequent research confirmed that Pennsylvania is one of the states where PFAS or PFAS precursors are being used in fracking and drilling.^{xxviii} The companies that have used PFAS or substances that break down into PFAS have been some of the biggest shale gas developers in Pennsylvania. XTO Energy, Inc., EOG Resources, Chevron, and Anadarko all developed and operated wells in the state and may have employed PFAS in fracking.^{xxix} Cross-referencing the map of where PFAS sampling sites were identified by PADEP^{xxx} with the locations of where drilling and fracking is the most concentrated in Pennsylvania^{xxxi}, shows there isn't much overlap. There has not been much PFAS sampling of water systems by DEP in the areas where gas extraction is the most intense, much of which is rural in nature; many get their drinking water from individual water wells, not public water systems. This means there is a lack of hard data about the presence of PFAS in the individual water wells used by people in many shale plays and conventional drilling regions, which is a serious oversight. These areas are already being negatively impacted by water and air pollution associated with drilling and fracking and this recently revealed threat of PFAS in the fluids being used there layers another water quality and health burden on the same communities. This important inequity must be resolved by including individual water wells in the rulemaking and not leaving these populations out of the protections all Pennsylvanians deserve and have a right to from the MCL regulations.

Speedy Implementation of MCLs is Essential

EQB Proposal: The MCL rulemaking states in the proposed rulemaking: "Initial compliance monitoring for community and nontransient noncommunity water systems serving a population of greater than 350 persons begins January 1, 2024; initial monitoring for community and nontransient noncommunity systems serving a population of less than or equal to 350 persons begins January 1, 2025."

DRN Proposal: There is no explanation why the compliance monitoring will not commence until January 1, 2024 or 2025. Under the proposed schedule, it will be another two to 3 years before verified clean drinking water is available from public water system taps. While DEP finalizes its bureaucratic process, people will continue to drink water that may contain PFAS without even knowing it.

The rulemaking proposal to slowly phase in the monitoring for larger and smaller systems is unwarranted. Customers of smaller systems will have to wait another year past those served by larger systems to find out if they are drinking water that contains PFOA and PFOS or other PFAS, which is not equitable.

All systems included in the rulemaking should be required to start sampling immediately upon adoption. All the necessary tools are at hand to implement the MCLs right away. There are systems in Pennsylvania already using technology that removes PFOA and PFOS from drinking water supplies, EPA has approved lab-testing methods, and companies are ready to install treatment systems. Under the proposed schedule, people will continue to drink water that may contain PFAS without even knowing it, exposing the public to compounds that could be harming their and their families' health.

Compliance monitoring should begin when the final rulemaking is adopted. PFOA and PFOS are highly toxic in tiny doses, build up in the human body, are difficult to excrete, and are linked to serious adverse health conditions, including cancers. The health effects of PFOA and PFOS are documented in the proposed rulemaking, verified by health studies and data, and thoroughly analyzed in scientific literature. These compounds should have been removed from drinking water years ago; further delay by the Commonwealth is an abrogation of DEP's duties.

Other states have implemented their MCLs in a timely manner that provides protection sooner than DEP's sluggish plan. A current example is the plan for PFAS MCLs being proposed by the State of Delaware. They are conducting stakeholder meetings this spring, will finalize the rulemaking in June, publish in July, and conduct a public input process with a goal of the MCL regulations for PFOA and PFOS to become effective in January 2023. Similarly, other states have proposed, adopted, and implemented MCLs within a one-year period. PADEP is dragging out implementation, inexcusably, for two to three years, after delaying response to DRN's Petition for Rulemaking for an MCL for PFOA since DRN submitted it to the Environmental Quality Board in May 2017. DRN argued at the time that the need for a safe drinking water standard was urgent then but, unfortunately, DEP delayed such regulatory action until its' long-awaited publication of a proposed rulemaking in February 2022, almost five years later and only after DRN had to go to the lengths of filing a lawsuit to press our Petition forward. There is simply no more time; additional delay is intolerable. People need safe, clean drinking water now.

Monitoring must be perpetual, comprehensive, and robust

EQB Proposal: The rulemaking proposes to allow systems with no initial detections of PFOA or PFOS to reduce monitoring to every 3 years. For systems with detections above the MCLs, DEP

proposes quarterly sampling until the level is reduced below the MCL, then annual monitoring may be allowed. DEP proposes that systems with no detections will automatically reduce their sampling to every three years. DEP proposes that waivers to reduce from annual to triennial monitoring can be allowed for systems with previous detections below the MCL.

DRN Proposal: No waivers should be allowed. Regarding frequency of sampling, DRN supports that sampling should be required at least quarterly for all systems for an initial period of one year. Sampling annually for systems with no detections after the initial period can be considered by DEP, taking into consideration potential contamination sources within the zone of influence for water sources. For systems that have detections, quarterly sampling should be required if the detection was below the MCL and at least monthly if the detection exceeded the MCL until the contamination is fully abated for a sustained period. The most effective, and a system which DRN advocates, would be real-time round-the-clock instantaneous monitoring that is digitally available on line. In today's digital world, such access to information is doable and is being achieved in other applications.

Sampling is crucial to obtain data that shows exactly what the PFAS concentrations are on a regular and ongoing basis. This provides necessary protection of public health and informs the public so that people can make informed choices regarding their water (i.e. installing additional tap water treatment, purchasing alternative supplies, not using tap water in baby formulas, moving from an area to obtain safer water, etc.).

PFOA and PFOS are “extremely persistent chemicals”.^{xxxii} The high toxicity of PFAS require that their spread into the environment be curtailed at every possible pathway and that if concentrations of PFOA and PFOS increase in drinking water supplies, it is essential that this be known as soon as possible to prevent people from being exposed.

In 2016, the National Toxicology Program of the U.S. Department of Health and Human Services “...concludes that both PFOA and PFOS are presumed to be an immune hazard to humans based on a high level of evidence from animal studies that PFOA and PFOS suppressed the antibody response and a moderate level of evidence from studies in humans. The evidence that these chemicals affect multiple aspects of the immune system supports the overall conclusion that both PFOA and PFOS alter immune functions in humans.”^{xxxiii} Additional studies have been conducted that provide further evidence that PFAS may hamper immune response to vaccines. A 2021 report stated, “Animal models and human studies have provided strong evidence that PFAS alter the immune system, diminishing the ability to fight disease or respond to a vaccine. These studies have heightened urgency as nations across the globe grapple with the coronavirus disease 2019 (COVID-19) pandemic and engage in a vaccination campaign of historic proportions. Researchers are intent on better understanding how PFAS affect coronavirus and other infectious diseases—as well as the vaccinations meant to stymie them.”^{xxxiv} The evidence that PFOA and PFOS can reduce or inhibit the efficacy of vaccines is crucial during the current pandemic (as well as the efforts to fight other diseases worldwide) and makes it very important to prevent the population's exposure to PFOA and PFOS through the major exposure route - drinking water.

Additionally, because PFOA and PFOS build up in the body, eliminating even very small concentrations as early as possible is important to protect public health. According to the U.S. Environmental Protection Agency (EPA): “Because PFOA can remain in the body for a long time, drinking water that contains PFOA can, over time, produce concentrations of PFOA in blood serum that are higher than the concentrations of PFOA in the water itself.”^{xxxv} Regular and perpetual sampling of drinking water will provide the data needed to inform people and prevent risk, no matter if the amounts are small or whether or not they are found in combination with other PFAS.

PFAS, including PFOA and PFOS, are highly mobile in water and can spread through various environmental media to enter water.^{xxxvi} They can migrate from a source of contamination unpredictably and rapidly, especially dangerous if the contamination source has not been identified and the water affected is not being monitored.

Whether detected during the initial period or not, monitoring is a prudent investment in protection of the public’s health. Allowing systems to monitor only every 3 years or to reduce monitoring as proposed based on certain sample results – only a “snapshot in time” - is irresponsible because the contamination can spread into a water supply and people could drink it for a period as long as 3 years, without knowing it, based on the proposed rule. The toxicity, mobility, bioaccumulation and persistence of these compounds require rigorous and continual monitoring in perpetuity to achieve protective early detection and ongoing permanent safety.

CONCLUSION

In conclusion, DRN supports the adoption of MCLs for PFOA and PFOS but we want the rulemaking to provide more protection than proposed.

PFAS pose enormous challenges that must be addressed by regulation to provide a top-quality program that will enforce the greatest protection possible for all Pennsylvanians’ drinking water.

PFAS compounds do not break down or biodegrade, becoming a permanent threat in the environment. Dubbed “forever chemicals”, they are highly toxic and linked to serious and potentially deadly diseases. Our youngest populations are especially vulnerable and require full protection.

These “forever chemicals” are still in the groundwater, surface water, soils, and sediments around where they were discharged, even if many years have passed since they were released.

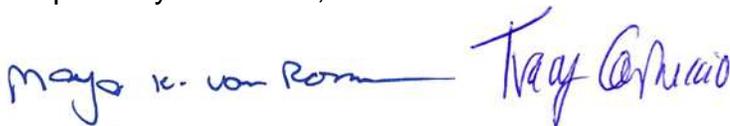
PFAS and PFAS precursors can spread in many ways including by releases from: manufacturing of commercial products; use of firefighting foams; spreading of sewage sludge and biosolids on agricultural and other lands; disposal of waste or soils from sites being remediated; depositing of waste solids, consumer products, or sewage sludge in landfills; discharges from sewage or industrial treatment facilities; air emissions from manufacturing, use, and disposal practices; and dredging up of sediments. Yet there is little data or reliable tracking and little regulation of these means of spreading PFAS farther into the environment and into water supplies, sometimes far

from the original source of contamination. In addition, PFAS can spread over time as the pollution plume moves with groundwater or other environmental media; it can build up in food, fish and other natural systems that multiply exposure pathways.

There are many thousands of PFAS and precursors employed in the past and still in use in today; even some of the so-called “replacement chemicals” are just as toxic as the original PFAS that were phased out over the last 20 years^{xxxvii} but their presence is not being monitored in drinking water. Removing PFAS from drinking water will not solve all these complex problems but it will provide critically needed human health protection and the requirement to filter out PFAS will clean some PFAS from certain currently uncontrolled pathways of pollution.

It is not debatable that many challenges face Pennsylvania in the attempt to address the PFAS crisis. DRN supports this first effort to adopt MCLs as a priority regulatory action but we urge DEP and the EQB to strengthen the proposed rulemaking. The rule must include more PFAS compounds, especially if their presence in Pennsylvania water is known; must include all water sources for all people; stricter, more protective MCLs; swift implementation that constitutes rapid response to an emergency situation; and vigilance in perpetual and comprehensive drinking water monitoring. Pure water is the Constitutional right of all Pennsylvanians.

Respectfully submitted,



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ⁱ Oliaei, F.Z., & Kriens, D.L., “Proposed Health-Based Maximum Contaminant Level (MCL) for Perfluorooctanoic Acid (PFOA) in Drinking Water. Technical Analysis of New Jersey Drinking Water Quality Institute”, Cambridge Environmental Consulting, November 18, 2016. <https://bit.ly/2VuRnyZ> and Oliaei, F.Z., & Kriens, D.L., “Technical Analysis of New Jersey’s Proposed Health-Based Maximum Contaminant Level (MCL) for Perfluorooctane Sulfonate (PFOS)”, Cambridge Environmental Consulting, January 2018. <https://bit.ly/2C9NMOt>

ⁱⁱ Paula I. Johnson, et. al., “The Navigation Guide—Evidence-Based Medicine Meets Environmental Health: Systematic Review of Human Evidence for PFOA Effects on Fetal Growth”, 2014. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4181929/pdf/ehp.1307893.pdf>

ⁱⁱⁱ Don L. Kriens Sc.D., P.E., Cambridge Environmental Consulting, “Review of New Jersey Second Addendum to Appendix C: Recommendation on Perfluorinated Compound Treatment Options”. January 2018. PDF p. 19. <https://www.delawareriverkeeper.org/sites/default/files/Combined%20Comments%20to%20NJJDWQI%20on%20PFOS%20%282018-01-31%29.pdf>

^{iv} The Drexel PFAS Advisory Group, “Maximum Contaminant Level Goal Drinking Water Recommendations for Per and Polyfluoroalkyl Substances (PFAS) in the Commonwealth of Pennsylvania”. January 2021. PDF p. 74.

^v <https://www.pacodeandbulletin.gov/Display/pabull?file=/secure/pabulletin/data/vol52/52-9/313.html>

^{vi} <https://www.pacodeandbulletin.gov/Display/pabull?file=/secure/pabulletin/data/vol52/52-9/313.html> and “Pennsylvania Department of Environmental Protection Evaluation Report on the Delaware Riverkeeper Network Petition for Rulemaking to set an MCL for PFOA”. April 16, 2021. PDF pages 23-26.

- vii Delaware Riverkeeper Network's Response to the Pennsylvania Department of Environmental Protection Evaluation Report on the DRN Petition for Rulemaking to Set an MCL for PFOA. May 16, 2021. P. 24 Citing *Pennsylvania Env'tl. Def. Found. V. Comm.*, 161 A.3d 911, 931 (Pa. 2017) (citing *Robinson Twp.*, 83 A.3d at 951).at 933.
- viii "Pennsylvania Department of Environmental Protection Evaluation Report on the Delaware Riverkeeper Network Petition for Rulemaking to set an MCL for PFOA". April 16, 2021. PDF p. 20.
- ix *Id.*
- x Delaware Riverkeeper Network's Response to the Pennsylvania Department of Environmental Protection Evaluation Report on the DRN Petition for Rulemaking to Set an MCL for PFOA. May 16, 2021. P. 24
- xi <https://www.dep.pa.gov/About/Regional/SoutheastRegion/Community%20Information/Pages/Neshaminy-Creek-Fish-Advisory.aspx>
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