



**SOUTH CAROLINA
ENVIRONMENTAL
LAW PROJECT**

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March 22, 2022

VIA U.S. MAIL

Ms. Denise Crawford
Clerk of the South Carolina Department of Health and Environmental Control Board
2600 Bull Street
Columbia, SC 29201

RE: Rural Water Petition for Rule-Making, S.C. Code Regs. 61-9.504.12, 61-9.504.13,
61-58.2, 61-58.3, 61-58.7, 61-58-11

Dear Ms. Crawford:

Enclosed for filing please find a Petition for Rule-Making and accompanying Exhibits
pertaining to various issues in rural water.

Please return by email a clocked-in copy of the enclosed.

Thank you for your attention to this matter and please advise if you have any questions or
concerns.

Cordially,

Benjamin D. Cunningham

Enclosures

Our Mission To protect the natural environment of South Carolina by providing legal services and advice to environmental organizations and concerned citizens and by improving the state's system of environmental regulation.

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STATE OF SOUTH CAROLINA
BEFORE THE BOARD OF THE DEPARTMENT OF
HEALTH AND ENVIRONMENTAL CONTROL

Denmark Cares,
Kim Weatherford,
Cheryl Cail,
Lakisha Wade,
Ken Harvin,
Gullah Geechee Chamber of Commerce,
South Carolina Interfaith Power & Light,
Denmark Citizens for Safe Water,

Requestors.

In re: Petition for Rule-Making, S.C. Code Regs. 61-9.504.12, 61-9.504.13,
61-58.2, 61-58.3, 61-58.7, 61.58-11

PETITION FOR RULE-MAKING

I. INTRODUCTION

At this moment, the South Carolina Department of Health and Environmental Control (“the Department” or “DHEC”) is presented with several opportunities to improve drinking water quality for citizens throughout the State and particularly in rural areas. The EPA has revised its Lead and Copper Rule and added a new trigger level for lead which is below the present action level. After the year 2000, several

rural and minority-serving water systems in South Carolina have exceeded the higher lead action level. Just since 2015, 48 water systems have exceeded the lead action level. These water systems and likely many others need to be improved to better serve their customers and amending several regulations can help facilitate their improvement.

There is also an opportunity to address a gap in the regulations as they relate to disinfectant use in drinking water that has been used in Denmark, South Carolina and perhaps other rural communities. This gap should be closed to ensure that only EPA-approved disinfectants are used to treat drinking water.

Over the past few years, several families have been plagued by drinking water contaminated by PFAS pollutants from industrial sludge. Families have lost their drinking water wells and have been exposed to dangerous chemicals that can cause cancer, endocrine disruption, high cholesterol and reproductive problems among many other adverse health effects. The industrial sludge regulations do not require analyzing sludge for PFAS pollutants prior to sludge application and also do not require monitoring of sediment or groundwater for these pollutants after application. This should be changed to protect drinking water in rural areas from contamination and risk of future contamination.

Finally, recent events in Summerton and elsewhere have shown that a gap exists in the regulations regarding water storage tank inspection. Currently, there is

no requirement that the interior of water storage tanks ever be inspected. The interior of the tank in Summerton hadn't been inspected in over twelve years and when it was, sediment was found that measured over a foot in some areas. This sludge contaminates drinking water and also makes treatment of water with chlorine less effective. Another risk is that animals or insects may penetrate the water storage tank and their carcasses can rot in the water over years. This gap in the regulations should be closed to further secure our drinking water supply.

Petitioners respectfully request that the Department begin rulemaking to amend its regulations to address these issues. All of these necessary improvements will be addressed in turn.

II. PETITIONERS AND THEIR INTERESTS

Petitioners are a collection of individuals and organizations who are affected by access to clean drinking water and who know how difficult it may be for South Carolinians living in rural communities to enjoy clean drinking water on a consistent basis.

Petitioner, Denmark Cares was founded by Letitia Dowling in 2019 in response to the water quality concerns of her hometown. Letitia Dowling is a third-generation resident of Denmark, SC, who developed a deep interest in the root causes and contributing factors that led to concerns about the water quality in Denmark. After in-depth research, extensive conversations with many agencies, government

agencies and stakeholders, many issues were highlighted with a need for more efficient solutions. As a result of collaborative conversations and advocacy, it became clear that many of the concerns stemmed from the need for more resources for rural communities, restructured policies and focused technical support. Denmark Cares has remained engaged and involved with environmental justice efforts in hopes that more strategic plans are prioritized to support water systems which provide an essential need to sustain the lives of mankind.

Petitioner, Gullah Geechee Chamber of Commerce is based in Georgetown, South Carolina and was founded in 2018. The mission of the Gullah Geechee Chamber of Commerce is to raise global awareness of, profitability and sustainability of African American business and other entities supporting the Gullah community. The Gullah Geechee Chamber is a strong advocate for our natural environment, including clean drinking water, and encourages career and business opportunities in green, renewable energy fields.

Petitioner, Kim Weatherford is a resident of Darlington County who has testified before the Medical Affairs Subcommittee of the South Carolina Senate about PFAS contamination that she and her family has experienced as a result of the application of PFAS contaminated industrial sludge to a neighboring agricultural field. Her well water was tested and the results showed an exceedance of the EPA Health Advisory Level of 70 ppt. Some of her family members have experienced

health issues consistent with PFAS exposure. DHEC and EPA have advised her family to cease drinking the well water.

Petitioner, Cheryl Cail is a small business owner and lives in Myrtle Beach, South Carolina. She is the Vice Chief of the Waccamaw Indian People, and the Chair for SC Idle No More, a Committee under the SC Indian Affairs Commission. In December 2018, her 20-year-old son was diagnosed with testicular cancer, a type of cancer that has been linked to PFAS exposure. After a Retroperitoneal Lymph Node Dissection to remove 42 lymph nodes, Ms. Cail and her son became aware of PFAS contamination in the groundwater at the former Myrtle Beach AFB from the use of aqueous fire-fighting foam which is notorious for its PFAS content.

In early 2020, Ms. Cail was asked to join the National PFAS Contamination Coalition Leadership Team. The NPCC has continued regularly meeting with the Department of Defense and other Federal Agencies, as well as the White House Council on Environmental Quality and National Academies of Science, Engineering and Medicine to provide stakeholders' input concerning the PFAS crisis, and to demand regulation that would help avert putting people like her son at risk.

Petitioner, Lakisha Wade is a resident of Sumter, South Carolina and has been involved with PFAS issues including testifying before the South Carolina Senate's Medical Affairs Subcommittee on legislation concerning PFAS.

Petitioner, Ken Harvin resides in Summerton, South Carolina and is the Program Associate/Rural Prosperity Coordinator for the South Carolina Association of Community Economic Development. Mr. Harvin has an interest in rural water quality not only personally but because the existence of the community where he resides depends on safe drinking water.

Petitioner, South Carolina Interfaith Power & Light is an organization inspired by diverse faith perspectives to respond to climate change and to care for the Earth and all of its inhabitants by engaging people of faith to work together for a just and sustainable future. Among its many concerns are climate change, environmental justice and the improvement of drinking water, especially for those in vulnerable communities.

Petitioner, Denmark Citizens for Safe Water is a grassroots organization based in Denmark, South Carolina and focuses on improving drinking water quality in and around Denmark. The issues raised in this Petition are important to our members and community and we encourage DHEC to act.

III. BACKGROUND OF THE AMENDMENTS SOUGHT

A. Lead and Copper Improvements.

As 2020 closed, the EPA finalized revisions to the Regulations concerning lead and copper content and treatment in drinking water. The proposed changes are interrelated and long overdue. Among the more important changes is the

establishment of a new trigger level for lead which is defined as exceeding the 90th percentile concentration by an amount greater than 10 micrograms per liter ($\mu\text{g/L}$). 40 C.F.R. § 141.80 (c)(1). Exceedance of this trigger level necessitates a variety of actions even though it is below the action level of 15 $\mu\text{g/L}$. See e.g., 40 C.F.R. § 141.80 (f)(2).

In data provided to Petitioners through a FOIA request, DHEC is aware that since 2015 at least 48 small water systems in South Carolina have exceeded the action level for lead in drinking water. Exhibit 1. In total, the lead action level has been exceeded over 75 times in South Carolina from 2015 to August of 2021. The lead trigger level would have been met or exceeded in an additional 40 instances among just this group of water systems in that time frame. It is unknown how many more water systems in South Carolina would have exceeded the new trigger level during that time, but undoubtedly the number would increase.

Most of these violations occurred in small water systems serving fewer than 1,000 customers. Among the systems affected are those serving Belton, Bowman, Ehrhardt, Honea Path and several other smaller communities. Perhaps most concerning is that a Head Start facility in Edgemoor that serves dozens of children has exceeded the lead action level 7 times since 2016 and would have exceeded the lead trigger level an additional two times. The new Lead and Copper Rule has additional protections and lower thresholds for action that DHEC should

immediately implement to protect South Carolina residents from harmful lead and copper exposure.

EPA is also proposing that States include an evaluation of corrosion control treatment (CCT) which, if properly deployed, diminishes lead oxidation and contamination in drinking water, as part of any sanitary surveys. 40 C.F.R. §§ 141.80 (d), 141.81, 141.82. There are numerous other provisions included in the new Rule but we believe that these and the following provisions should necessitate DHEC promulgating new State regulations to comply with the new Lead and Copper Rule as quickly as practicable.

The new Rule removes Calcium Carbonate stabilization as a potential CCT technique and the regulation should be amended so that this change is express and easily enforceable. 40 C.F.R. § 141.82. The new Lead and Copper Rule also includes the addition of targeted sampling requirements for schools and child care facilities. 40 C.F.R. § 141.85.

EPA further proposes that every water system create an inventory of all system-owned and customer-owned lead service lines in each system's respective distribution network. 40 C.F.R. § 141.84 (a). Following the completion of the inventory, EPA proposes that all water systems with lead service lines or service lines of unknown material prepare a lead service line replacement plan. This plan would identify how the respective water system will pay for replacing the water-

system-owned portion of a lead service line and must consider “ways to accommodate customers that are unable to pay to replace the portion they own.” 40 C.F.R. § 141.84 (b)(7). South Carolina should likewise include these requirements in its regulations.

After the inventory and replacement plans have been completed, EPA proposes various rules relating to replacement of lead service lines. If the water system is otherwise in compliance with the action and trigger lead levels, that water system must still replace the water-system-owned portion of the lead service line if and when a customer replaces their portion of the lead service line. 40 C.F.R. § 141.84 (d)(3)-(4).

Even though the EPA has finalized the new Rule, contained within that Rule are certain requirements that an individual State must set. There are certain percentages of mandatory replacement requirements when a water system exceeds the trigger level or action level and, again, these vary depending on the size of the water system. If the water system serves more than 10,000 customers, it must replace lead service lines at an annual rate approved by the State. 40 C.F.R. § 141.84 (g)(9).

For smaller water systems, the new Rule allows them to pursue lead service line removal, implement CCT or install point-of-use devices. The Department should implement criteria to evaluate any alternative chosen by a small water system

so that repeated exceedances require the more permanent fix of lead service line removal.

It is noteworthy that the EPA states in making its lead service line replacement plans, “all water systems” must consider, among other things, “[a] funding strategy for conducting lead service line replacements which considers ways to accommodate customers that are unable to pay to replace the portion they own.” 40 C.F.R. 141.84 (b)(7). Thus, it is contemplated that water systems may participate in the removal of the customer’s portion of the water line. Opportunities for the replacement of the customer’s portion of a lead water line should be maximized and should coincide with lead service line replacement of the water system owned portion.

The importance of having resources available to assist water systems, particularly small water systems, and individual homeowners is obvious. Our review of recent lead action level exceedance reports in South Carolina causes the Petitioners to conclude that these events most often occur in small, rural water systems that often serve ethnic minority populations or less affluent areas. Not only is the water-system often small and underfunded, many of the customers themselves may not be able to pay for their portion of the lead service line replacement. It is vital for small South Carolina water systems and residents served by those systems to receive priority and to harness available funds in order to have safe drinking water.

B. FIFRA Registration for Water Treatment Chemicals.

The facts surrounding the use of Halosan in Denmark, South Carolina are well-documented. DHEC approved the use of Halosan, a disinfectant that was supposed to have been registered with the Environmental Protection Agency pursuant to the Federal Insecticide, Fungicide and Rodenticide Act (“FIFRA”). Halosan had not been approved for registration, which requires a proposed chemical to undergo a strenuous examination by EPA under FIFRA, and had not been sanctioned by the EPA for use. It is troubling that DHEC was apparently unaware of Halosan’s registration status prior to approving its use. Under current DHEC regulations, a chemical may be used to treat drinking water if it meets the specifications of American National Standards Institute/National Sanitation Foundation (“ANSI/NSF”) Standard 60. S.C. Code Regs. 61-58.2 E. (3) (groundwater treatment); see also S.C. Code Regs. 61-58.3 E. (3) (surface water treatment). Halosan had not been registered as compliant with FIFRA and North Carolina’s Environmental Protection Agency had already refused to allow drinking water to be treated with Halosan.

The North Carolina agency’s concerns were several and it is unclear if DHEC shared them. Primarily, there was a concern that Halosan’s byproducts might accumulate in a well with long-term use, as it was in the Denmark scenario, and negatively affect water chemistry. Exhibit 2 at p. 1 (“There were many stated reasons of concern, one being that the concentrations of brominated and chlorinated

disinfection byproducts evaluated in the water samples were determined under conditions that did not reflect the typical groundwater conditions in North Carolina.”). Secondly, and relatedly, there were concerns that it had only been approved for treatment of spas and fountains, not drinking water. and uncertainty about byproducts and how they would. *Id.* at p. 3 (“EPA has not approved this chemical for use in drinking water. It has been approved and used in spas and fountains.”).

It is unknown whether DHEC considered any of these questions before approving the use of Halosan for Denmark’s drinking water. What is known is that DHEC relied upon and continues to rely upon, ANSI/NSF Standard 60 certification for approval decisions. S.C. Code Regs. 61-58.2 E. (3) (groundwater treatment); see also S.C. Code Regs. 61-58.3 E. (3) (surface water treatment). There is no other requirement to assess drinking water treatment chemicals in the drinking water regulations. S.C. Code Regs. 61-58.2 passim (groundwater treatment); see also S.C. Code Regs. 61-58.3 passim (surface water treatment).

The concerns raised by the North Carolina Environmental agency are not alleviated simply by determining whether a chemical such as Halosan complies with ANSI/NSF Standard 60, however. Determination of whether a chemical complies with Standard 60 specifications is made by a private entity composed, in part, of representatives of various manufacturers whose interests are not solely centered on

public health. More importantly, Standard 60 does not address, and is not intended to address, disinfectant byproducts. The Environmental Protection Agency is working on promulgating additions to its Disinfection Byproducts Rule while there are certain byproducts already regulated such as trihalomethanes and haloacetic acids. How the registered chemical is used is vitally important in determining whether the proposed use complies with what the ANSI/NSF Standard 60 review actually approved.

When Halosan's lack of FIFRA registration finally became known, Clemson University's Department of Pesticide Regulation issued a stop-use Order that halted its use for treatment of drinking water in the City of Denmark. This was very late in coming. Halosan had been used to treat drinking water in Denmark for approximately 10 years, from 2008 to 2018.

Following the stop-use Order, the Cox Mill well was taken out of service and the use of Halosan was consequently discontinued in Denmark. It is unknown whether private wells or other entities continue to use Halosan in South Carolina. In response to these disturbing events, the Department has proposed to shift responsibilities in the context of a review. Now, unlike before, which is concerning in and of itself, the water treatment engineer must affirm that the treatment chemical complies with FIFRA.

The primary aim of this Petition as it relates to this issue is to ensure that non-FIFRA registered chemicals are not used for drinking water treatment. The Department is already required to authorize any chemical applied to treat drinking water. S.C. Code Regs. 61-58.2 E. (1); 61-58.3 E. (1). Existing regulations also require that any chemical added to drinking water “[e]nsure maximum safety to [the] consumer[.]” S.C. Code Regs. 61-58.2 E. (1)(b)(ii); 61-58.3 E. (1)(b)(ii). Requiring the Department to maintain and consult a list of FIFRA approved treatment chemicals along with other federally compliant chemicals as a check in the approval process is consistent with and, indeed, should be required by these broader mandates. If this Petition is granted, the Department will be taking steps to ensure that South Carolinians’ drinking water is not treated with potentially harmful and unapproved chemicals.

C. Water Storage Tank Inspections.

Petitioners also request that the Department amend Regulation 61-58.7 to require all public water systems to inspect the interior of any storage tank annually and to report the findings of any such interior storage tank inspection to the Department. Such inspections are required in other states and are needed here to ensure that South Carolinians do not drink water contaminated by sediments, animal carcasses or feces, insects or other contaminants.

As the Department is aware, a large storage tank in Summerton, South Carolina, had not been cleaned in at least 12 years and the sludge that had been allowed to collect inside created discolored water. With respect to the North Shore community in Summerton, 70 of 72 water customers had complaints about their drinking water. When the tank was finally inspected, the sediment had accumulated to at least a foot deep in certain areas. Excessive sediment in storage tanks fosters bacteria growth and makes chlorine treatment for iron less effective. The EPA has acknowledged that links have been found between sediment or sludge build up in storage tanks and Legionnaires' disease.

The regulations currently require the annual inspection of "vent screens, hatches and other openings on atmospheric tanks" and weekly inspection of all "elevated, hydropneumatic and ground storage tanks" for "security of the tanks(s)" and for "proper air/water ratios[.]" S.C. Code. Regs. 61.58.7(E)(2). There is no provision, however, that requires the internal inspection of water storage tanks. The interior of the storage tank in Summerton had not been cleaned in at least 12 years and it is unknown if the interior was ever inspected during that time period. The lack of an internal inspection requirement is a gap in the regulations that may lead to the provision of illness-causing drinking water in this State. Other States have taken steps to ensure their citizens are provided clean drinking water and South Carolina should join them.

The EPA and the Water Industry have long understood the necessity of interior tank inspections. In 2002, EPA noted that “[t]he need for comprehensive inspections is generally recognized by the water industry. AWWA Manual M42 (1998) recommends that tanks be drained and inspected at least once every 3 years or as required by state regulatory agencies.”¹ Among the problems found in water storage tanks is sediment accumulation and microbial contamination. “Sediment accumulation occurs within storage facilities due to quiescent conditions which promote particle settling. Potential water quality problems associated with sediment accumulation include increased disinfectant demand, microbial growth, disinfection by-product formation, and increased turbidity within the bulk water.”²

“Microbial contamination from birds or insects is a major water quality problem in storage tanks. One tank inspection firm that inspects 60 to 75 tanks each year in Missouri and southern Illinois reports that 20 to 25 percent of tanks inspected have serious sanitary defects, and eighty to ninety percent of these tanks have various minor flaws that could lead to sanitary problems (Zelch 2002).”³

“Storage facilities have been implicated in several waterborne disease outbreaks in the United States and Europe. In December 1993, a *Salmonella typhimurium* outbreak in Gideon, Missouri resulted from bird contamination in a

¹https://www.epa.gov/sites/default/files/2015-09/documents/2007_05_18_disinfection_tcr_whitepaper_tcr_storage.pdf at p. 11.

² *Id.* at p. 2.

³ *Id.* at p. 3.

covered municipal water storage tank (Clark et al. 1996). Pigeon dropping on the tank roof were carried into the tank by wind and rain through a gap in the roof hatch frame (Zelch 2002). Poor distribution system flushing practices led to the complete draining of the tank's contaminated water into the distribution system. As of January 8, 1994, 31 cases of laboratory confirmed salmonellosis had been identified. Seven nursing home residents exhibiting diarrheal illness died, four of whom were confirmed by culture. It was estimated that almost 600 people or 44% of the city's residents were affected by diarrhea in this time period.”⁴

Given the many problems that have been caused by unsanitary water storage tanks, several States have adopted regulations requiring interior inspection. After an unsanitary water storage tank caused an outbreak in Alamosa, Colorado in which one person died and another 1,300 people were sickened, including almost 40 percent of the infants in the city, Colorado promulgated regulations requiring the interior inspection of water tanks. 5 CCR 1001-11:11.57. The regulations in Colorado are comprehensive and detail two levels of inspections of water storage tanks that must occur. Periodic inspections are external inspections that must occur annually. Comprehensive inspections are inspections that include “**internal and external storage tank inspection** to identify sanitary defects” among other

⁴ Id.

observations and must occur every five years. 5 CCR 1002-11:11.28(1), (2) (emphasis added).

Similarly, Vermont requires that all “water storage tanks [] be comprehensively inspected, **inside and out**, every 5 years, except for newly constructed, newly painted (inside), or newly reconditioned tanks (inside and outside)” which must be inspected “within 10 years of service and every 5 years thereafter.” Vt.Admin. Code 16-3-500:7.1.2 (emphasis added).

New Hampshire also requires inspection every five years. N.H. Code Admin. R. Env-Dw 504.09(a)(“[a]t least once every 5 years, the water system owner shall have each water storage tank used by the system to be inspected to the maximum extent practical”).

Florida Regulations require that “[f]inished-drinking-water storage tanks ... shall be cleaned at least once every five years to remove biogrowths, calcium or iron/manganese deposits, and sludge from inside the tanks....” Fla. Admin. Code R. 62-555.350(2).

Tennessee requires that community water systems have “a professional inspection[,]” as opposed to a routine inspection, for distribution water storage tanks and clearwells “at least once every five years.” Non-community water systems are required to have a “professional inspection” of “atmospheric pressure and

distribution storage tanks and clearwells no less frequently than every five years.”
Tenn. Comp. R. & Regs. 0400-45-01-.17(33).

In Texas, regulations require that water storage tanks be inspected annually and that ground and elevated water storage tank inspections must ensure that there is **“adequate protection against insect, rodents, and other vermin, [and that] the interior and exterior coating systems** are continuing to provide adequate protection to all metal surfaces, and the tank remains in a watertight condition.” 30 Tex. ADC § 290.46(m)(1)(A)(emphasis added).

New York City’s administrative code requires exterior and interior inspection of water tanks “at least once annually” and the owner is required to provide documents including “visual depictions, such as photographs or video, which display the **interior and exterior of the water tank.**” Admin. Code of the City of New York. § 17-194 b. (emphasis added).

There is scientific justification for requiring the internal inspection of water storage tanks and the fact that many States also require it supports the conclusion that doing so is both necessary and economically justifiable.

D. Industrial Sludge Pollutant and Monitoring Update.

Additional contaminants have been identified in industrial sludge that has been applied to land throughout South Carolina, and Regulation 61-9.504 should be revised or, alternatively, an emergency regulation should be pursued. Perhaps best

illustrating this need is the current groundwater contamination caused by use of industrial sludge contaminated with PFAS chemicals that has occurred in and around Darlington, South Carolina and other areas such as Sumter, South Carolina.

The EPA and DHEC have found extensive groundwater contamination from the application of industrial sludge that contained PFAS chemicals that are also known as “forever chemicals”. This situation has been reported in an article in The State newspaper and discussed in Chalita Jackson’s Letter to the Editor on the Darlington contamination issue. The EPA’s website even has a page devoted to the so-called Galey and Lord Sludge Fields that notes the PFAS-contaminated sludge was spread over almost 10,000 acres of agricultural fields in Darlington County.⁵

Several private drinking water wells in this area have been tested and the water has exceeded the EPA’s health advisory of 70 parts per trillion for PFOA and PFOS including Petitioner, Kim Weatherford’s family well and her mother-in-law’s well next door. PFAS-contaminated groundwater is a serious problem for many in South Carolina and one that is likely to grow unless the Department acts now to stem the source of contamination.

In its Strategy to Assess the Impact of Per- and Polyfluroalkyl Substances on Drinking Water in South Carolina, the Department’s Bureau of Water stated “Up to

⁵[https://response.epa.gov/site/site_profile.aspx?site_id=14536#:~:text=The%20site%20consists%20of%20approximately,WTP\)%20from%201993%20until%202013.](https://response.epa.gov/site/site_profile.aspx?site_id=14536#:~:text=The%20site%20consists%20of%20approximately,WTP)%20from%201993%20until%202013.)

this point, PFAS have not be[en] regulated and, therefore, not evaluated in the decisions to permit land application of effluent or sludge. These sites could contain PFAS if there were PFAS inputs to a WWTP [wastewater treatment plant] that partitioned into the sludge or passed through the WWTP and exited through the effluent.” Exhibit 3, Excerpt Strategy at p. 14. The Bureau of Water also noted that there are, at least as of January 2020, 137 WWTPs currently permitted to land-apply industrial effluent and 23 WWTPs currently permitted to land-apply industrial sludge. Id. at p. 14, Table 9. As there are “hundreds of thousands of private wells in South Carolina” which may be vulnerable to PFAS contamination if the surface, shallow sub-surface or groundwater is contaminated, the Bureau of Water concluded that one of the “more important questions for determining the vulnerability of a drinking water source, but especially for private wells, to PFAS” is whether “there is a likely source of PFAS near a drinking water source?” Id. at 17, 20.

Requiring an analysis for PFAS of industrial sludge before application should reveal whether there is a “likely source of PFAS near a drinking water source” if there are public or private wells nearby or if surface water is used for drinking water purposes. Moreover, determining whether PFAS chemicals are in sludge or effluent applied to crop fields will also reveal whether those crops, or livestock that ingest the crops, are at risk for PFAS contamination.

After noting several cases of PFAS milk contamination in dairies around the United States and PFAS bioaccumulation in cattle, a recent paper reached the following conclusion:

In integrated crop–livestock systems, PFAS compounds are impacting surface water and groundwater by infiltrating through soils from industrial sources of contamination. Once groundwater is contaminated, it can lead to exposure pathways of bioaccumulation in plants and cattle contaminating the entirety of farm produce and dairy products. Consumption of these contaminated products leads to severe human health issues. There is evidence of PFAS contamination in milk and meat samples from dairies in countries such as the United States and China.

Per- and Polyfluoroalkyl Substances (PFAS) in Integrated Crop-Livestock Systems: Environmental Exposure and Human Health Risks. *Int. J. Environ. Res. Public Health*, 2021 Dec; 18(23): 12550 (published online Nov. 28, 2021); <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8657007/>.

Scientists have recognized that, in addition to contaminating surface and groundwater sources, sludge and effluent contaminated by PFAS has the ability to further contaminate crops and livestock and can bioaccumulate in humans through that pathway as well. Analyzing sludge or effluent before it is applied to land, often as fertilizer, for PFAS contaminants could preclude exposure via that route as well.

Analyzing sludge or effluent for PFAS chemicals, in particular PFOS and PFOA, is but the first step in limiting exposure to the chemicals. If sludge or effluent

shows that it is contaminated by PFAS chemicals, the Department should not allow land application.

Furthermore, if subsequent testing of sludge shows excess PFAS contamination, past land-applications from this source of sludge should be noted and monitoring for PFAS in groundwater and sediment should be undertaken. EPA has provided validated laboratory methodology for testing for PFAS not only in surface water, wastewater and groundwater, but also in soils. See <https://www.epa.gov/newsreleases/epa-announces-first-validated-laboratory-method-test-pfas-wastewater-surface-water>.

IV. PROPOSED NEW REGULATIONS

Pursuant to S.C. Code Ann. § 1-23-126, Petitioners request that the Department initiate rulemaking to amend several South Carolina Regulations as discussed herein. These amendments are necessary to fulfill the Department's non-discretionary duties to the public under South Carolina and to ensure the safety and health of South Carolinians.

A. Updated Lead and Copper Regulations for South Carolinians.

The Department is, of course, obligated to adopt the EPA's new Lead and Copper Rule. See e.g., S.C. Code Ann. § 48-5-60(1) (Department authorized to "promulgate regulations with authority input to effectuate the provisions of this chapter and the Clean Water Act and the Safe Drinking Water Act"). Petitioners are

unaware of any efforts the Department has made in moving to adopt the new Rule, however. The first priority should be for DHEC to amend S.C. Ann. Regs. 61.58-11 to include the new Lead and Copper Rule with its new “trigger level” for lead of 10 µg/L. 40 C.F.R. § 141.80 (c)(1). In conjunction with this amendment, the Lead and Copper Regulation should be further amended to require water systems that exceed the trigger level to implement lead service line removal and/or to begin utilizing CCT or re-optimize CCT as required under Section III B.2. or III.G.2 as the case may be.

Merely adopting the new Rule will not fulfill the Department’s obligations because there are certain decisions a State implementing the new Rule must make for itself. Included in the new Rule are certain percentages of mandatory replacement requirements when a water system exceeds the trigger level or action level and, again, these vary depending on the size of the water system. If the water system serves more than 10,000 customers, it must replace lead service lines at an annual rate approved by the State. We propose that South Carolina set this rate at five percent, at least, if the trigger level is exceeded and that the rate increases to seven percent if the action level is exceeded. Many water systems around the country are conducting lead service line replacements in excess of five percent with some reaching seventeen percent annually. The State of Michigan mandates that all water systems remove LSLs at five percent and this rate is increased to seven percent

when the lead action level is exceeded. Massachusetts also requires replacement at seven percent annually if the lead action level is exceeded. South Carolina owes its citizens at least the same level of protection. Moreover, with federal infrastructure funds flowing into South Carolina, now is the prime opportunity to push lead service line replacement because there is money to help water systems accomplish it.

For smaller water systems, the new Rule allows them to pursue lead service line removal, implement CCT or install point-of-use devices. The State should implement criteria for the evaluation and approval of alternatives for small water systems that have exceeded the action or trigger levels. Among the factors we propose the Department weigh in reaching a decision are the following: the amount by which the action level and/or trigger level was exceeded, the number of instances the action level and/or trigger level has been exceeded in the past, the percentage of lead service lines still in use by the water system in question, whether CCT has been utilized by the water system in the past or is purported to be utilized by the system presently, and the prevalence of lead service lines throughout the water system distribution network.

If a small water system has a smaller percentage of lead service lines, then it could well be more economically sound to simply replace the pipes than to embark on implementing CCT or point-of-use devices that could be needed indefinitely. Point-of-use devices could be warranted as a short-term solution while the funding

for the service line replacement is appropriated. Obviously, if CCT is already being utilized by the system and the lead levels are still elevated, another path should be chosen. Similarly, if CCT has been employed successfully in the past but the water system had abandoned its use previously, it would be prudent to encourage the water system to pursue a more permanent solution.

Given the addition of the lead trigger level and the relationship between its exceedance and the exceedance of the action level and requirements for lead service line replacement, we also propose that DHEC implement additional guidelines to assist smaller water authorities with obtaining the necessary funding, including, most importantly, principal forgiveness, to finance the lead service line replacement for the State to utilize in evaluating how it apportions funding, including the State Revolving Fund, and the exploration of other funding sources. We would also propose guidelines for the State to help identify and facilitate small water systems' procurement of additional funding for lead service line replacement.

B. FIFRA Compliance Regulation for Water Treatment.

The proposed regulations to address Petitioners' concerns are straightforward. The first, which seeks to address the gap in the regulations as it relates to non-FIFRA registered chemicals, is especially simple. Instead of requesting that an engineer of a local water authority certify that a proposed chemical has been registered pursuant to FIFRA, as the Department has suggested, the responsibility should be borne by

the Department which, as Petitioners noted earlier, is already required to authorize all chemical application to drinking water. S.C. Code Regs. 61-58.2 E. (1) (“No chemical shall be applied to treat drinking waters unless specifically permitted by the Department.”); 61-58.3 E. (1) (accord). Instead of relying on local officials or manufacturers, DHEC has the expertise necessary to ensure that any chemical used to treat drinking water in South Carolina that comes under FIFRA oversight is properly registered. To be clear, Petitioners are not proposing that DHEC pursue registration of any particular chemical itself. Instead, Petitioners submit that DHEC should be required to ensure that any chemical proposed to be used to treat drinking water is, when required, registered under FIFRA.

Therefore, Petitioners request that regulations 61-58.2 and 61.58.3 be amended so that before the Department authorizes use of any chemical to treat surface water or groundwater that will be used as drinking water, the applicant must certify and the Department must confirm that the requested chemical, if used as an insecticide, fungicide or rodenticide, has been registered properly under FIFRA. If the chemical has not been registered at the time of the request for authorization, the Department must deny approval for use of the chemical and encourage the proposal of alternatives that have been registered.

Petitioners suggest that the following regulation be altered as denoted in bold: “All chemicals and products added to a public water supply as part of the treatment

process shall be certified as meeting the specifications of the American National Standards Institute/National Sanitation Foundation Standard 60, Drinking Water Treatment Chemicals-Health Effects, **and shall be certified to comply with all federal drinking water statutes, regulations and requirements including, but not limited to, the National Safe Drinking Water Act, the National Primary Drinking Water Regulations, and, when applicable, the Federal Insecticide, Fungicide and Rodenticide Act.** S.C. Code Ann. Reg. 61-58.3 E (3)(with suggested amendment in bold). There is a similar requirement found in the Operation and Maintenance Regulation under the General Requirements for Operation and Maintenance of Public Water Systems that should be amended in accordance with this language as well. S.C. Code Ann. Reg. 61-58.2 E. (3).

This will not only help ensure that families are provided safe drinking water with appropriate treatment, but it will also provide certainty for water authorities in their provision of service. If it becomes apparent that a chemical is in use without proper registration, this may lead, as it did in Denmark, to a stop-use Order. Such an Order could interrupt water service for an extended period of time while the situation is assessed and approval for a registered treatment chemical is sought. Having FIFRA registered treatment chemicals in use at the outset eliminates the potential for an interruption in service while also providing assurance to customers that the treatment chemicals in use have been properly vetted by EPA.

C. Water Storage Tank Annual Inspections.

The time has come for South Carolina to join the growing ranks of States that require the internal inspection of water storage tanks on a regular basis.

In addition to requiring inspection, Petitioners request that the Department amend Regulation 61-58.7(E) to require that if an interior inspection reveals an extensive buildup of sediment, debris, rust, insects, animals, corrosion, scaling or other unsanitary condition within the storage tank, that the public water system is required to clean the tank and properly disinfect it within a period not to exceed six months. Currently, 61.58.7(E) has only a few provisions that relate to water storage tanks and while subsection (2) requires an annual inspection of “[v]ent screens, hatches and other openings on atmospheric tanks ... to ensure sanitary protection[,]” none require inspection of the interior of the water storage tank. Adding a requirement for cleaning is necessary given what has come to light during the past year, and a six-month window is an appropriate time period within which to require action.

D. Identify PFAS in Industrial Sludge Before Application.

It is inescapable that PFAS chemicals are already affecting South Carolina drinking water. At DHEC’s request, families have already had to cease using private wells for drinking water. In several cases this is because PFAS contaminated sludge was spread on nearby land.

Regulation 61-9.504.12 outlines general requirements that must be satisfied before industrial sludge may be applied to land. Among the requirements listed is that industrial sludge must be analyzed for nutrients and pollutants. S.C. Code Regs. 61-9.504.12(o)(2)(iii)(B), (C). Various pollutants are listed for analysis but no PFAS class chemicals are included. Similarly, Regulation 61-9.513 restricts the application of industrial sludge if certain ceiling concentrations, cumulative pollutant loading rates, pollutant concentrations or annual pollutant loading rates for various pollutants are exceeded. As in the case of Regulation 61-9.504.12, Regulation 61-9.513 does not set any limits on the application of PFAS contaminated industrial sludge to land—including agricultural fields.

EPA has already published toxicity assessments for PFOA, PFOS, PFBS and now the GenX chemicals, hexafluoropropylene oxide dimer acid and its ammonium salt.⁶ EPA's Office of Research and Development is currently concluding toxicity assessments on PFBA, PFHxA, PFHxS, PFNA, and PFDA. All of these PFAS chemicals should be tested for in industrial sludge unless the provider can demonstrate conclusively that none of its processes would lead to the generation of sludge with these chemicals. There is ample scientific evidence that PFAS chemicals in general, and those listed above, meet the definition of "pollutant" contained in Regulation 61-9.504.9(u) which defines "pollutant" as "an organic

⁶ https://www.epa.gov/system/files/documents/2021-10/genx-final-tox-assessment-general_factsheet-2021.pdf

substance, or an inorganic substance, a combination of organic and inorganic substances ... that, after discharge and upon exposure, ingestion, inhalation, or assimilation ... cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction), or physical deformations in either organisms or offspring of the organisms.”

Furthermore, given the large number of additional chemicals in the PFAS family that have the same chemical properties of known carcinogens, if the supplier of the sludge is aware of the potential for the inclusion of any PFAS chemical listed in the Toxic Release Inventory List at the time the permit is sought, then it should test for any such chemical’s presence in the sludge. A current listing for PFAS chemicals on the TRI is found in the attached Exhibit. Exhibit 4.⁷

Like South Carolina, the State of Maine has been presented with PFAS contamination of land that has led to the contamination of dairy milk and to economic adversity for farmers. See Exhibit 5. The Maine Regulation sets waste concentration limits with respect to PFBS, PFOS and PFOA for dry weight use. 06-096 Me. Code R. Ch. 418, App. A. The acceptable risk level for PFBS, PFOA and PFOS were set to address the potential for “leaching of contaminants from the secondary material into groundwater and the subsequent ingestion of the groundwater.” Id. The methodology used includes the use of the SESOIL and

⁷ https://www.epa.gov/system/files/documents/2022-01/tri_non-cbi_pfas_list_1_21_2022_final_0.pdf

AT123D models[.]” Id. The acceptable risk levels are as follows: PFBS 1.9, PFOS 0.0052 and PFOA 0.0025.

The Regulation should also be amended so that if any sludge with PFAS concentrations at or above those contained in the Maine Regulations cannot be applied to land whatsoever. If PFAS concentrations are detected but are below the limits set, then DHEC must (1) determine and set an appropriate limit for industrial sludge application near surface water and (2) determine and set an appropriate limit for industrial sludge application on land with a high groundwater table or with groundwater that is used as a source of drinking water by individuals, water authorities or businesses.

Because of the durability (and residual loading) of PFAS contaminants in nature, subsequent use of PFAS-contaminated sludge in a field or area that had PFAS-contaminated sludge applied in the past could lead to collection of PFAS chemicals in groundwater or surface water that exceed, in total, any safe level even though neither of the prior sludge applications exceeded the levels when applied. Therefore, in the event any industrial sludge has been shown to contain any PFAS chemical in any concentration, ground water and surface water must be monitored after application.

Petitioners are heartened to learn that the Bureau of Water has recently drafted a Strategy to assess the impacts of PFAS chemicals in drinking water wells near

industrial sludge sites. There are many commendable goals included in the draft but Petitioners submit that regulation amendment, and/or the promulgation of an emergency regulation, is necessary.

If the Department has decided to “[p]lace a hiatus on new land application sites until source(s) to be applied is/are confirmed to be of no risk[,]” Petitioner submits an emergency regulation to that effect should likely be promulgated. While this hiatus would be welcome, Petitioners remain concerned because the hiatus would only apply, seemingly, to “new land application sites” and not to sites that have had industrial sludge applied in the past and to which more industrial sludge may be applied in the present or future. This limitation has the potential to endanger those living near active or past sites because PFAS contamination could worsen while further assessment is done. In addition to private well sampling, surface and groundwater should be sampled near impacted sites as well.

Although DHEC proposes to require “sampling of sludge/septage/wastewater as part of land application permit renewals[,]” there is no contemplation of restricting land application based on what the sampling reveals. Instead, the purpose of the sampling appears to be to assist in “reprioritiz[ing] facilities for additional assessment and/or corrective action[.]” Petitioners agree that reprioritization based upon sampling is useful but still allowing land application regardless of what the sampling reveals would continue to exacerbate a known public health threat.

The draft strategy is silent on which PFAS chemicals will be assessed in sampling. Petitioners recommends going beyond PFOS and PFOA and including, at least, those chemicals listed in Toxic Release Inventory List that is attached as Exhibit 4. Petitioners also note that one of the purposes of the Strategy is to assess the PFAS content of “plant tissue of crops and hay grown on land where PFAS has been detected[.]” That is a necessary goal, without question, but additional steps are needed to fully assess how PFAS contamination of agricultural fields and/or groundwater may affect the food web. In addition to crops, livestock and dairy products should be assessed because, as noted earlier, many studies have already demonstrated that these are sources of PFAS contamination that may be ingested by and bioaccumulate in humans.

The Department has the authority to promulgate emergency regulations under S.C. Code Ann. § 1-23-130. This code section provides that if the Department “finds that an imminent peril to public health, safety, or welfare requires immediate promulgation of an emergency regulation before compliance with the procedures prescribed in this article or if a natural resources related agency finds that abnormal or unusual conditions, immediate need, or the state’s best interest requires immediate promulgation of emergency regulations to protect or manage natural resources....” S.C. Code Ann. § 1-23-130(A).

Those conditions are met here because certain members of the public, including one of the Petitioners and her family, have already been told of an imminent peril to their safety and welfare due to the contamination of their drinking water. Many other families in this area of South Carolina have received the same alarming news. If DHEC places a moratorium or hiatus on the application of PFAS-contaminated industrial sludge for “new land application sites” as contemplated, Petitioners submit that an emergency regulation that adopts or tracks the Maine limits for ongoing PFAS-contaminated industrial sludge land applications should be promulgated, at the very least. Although DHEC has the authority to act on a permit by permit basis, these pollutants are ubiquitous and accumulative contamination should be addressed far into the future. Therefore, standards should be included in the regulations themselves.

Safeguarding drinking water sources and sustenance habitat is protective of public health. Moreover, assessing where PFAS contaminated sludge is and precluding water contamination is cost effective for the State and the sludge suppliers as remediation is, as will be seen at the Galey & Lord site that was recently proposed for inclusion on the National Priorities List, extremely expensive.

V. CONCLUSION

DHEC is tasked with ensuring that South Carolinians have safe drinking water. In general, DHEC has done an admirable job grappling with this herculean responsibility. There is, however, room for improvement.

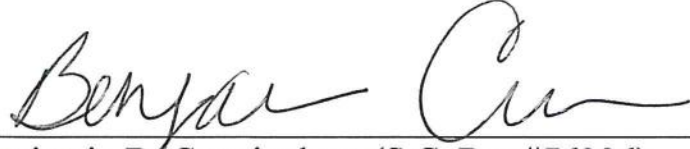
The Department should not DHEC settle for compliance with outdated standards that are not sufficiently protective of public health. Nor should the Department wait on the excruciatingly slow federal progress on PFAS to carry out its mission “to improve the quality of life for all South Carolinians by protecting and promoting the health of the public and the environment.” With likely administrative and operational delays stemming from a potential major reorganization of the agency next year, prompt and decisive action is needed now.

If the Department grants this Petition it will decrease the amount of lead and copper in drinking water; it will ensure that only EPA approved chemicals are, when needed, used to treat drinking water; it will prevent water systems from providing water that has been made unsanitary by contamination in a water storage tank; it will limit the pathways for PFAS chemicals to endanger human health and contaminate drinking water and crops. These are laudable goals that are within reach.

Petitioners respectfully request that their Petition for Rule-Making be granted and that the Department begin the rule-making process to amend the Regulations consistent with this Petition.

Respectfully submitted,

SOUTH CAROLINA ENVIRONMENTAL LAW PROJECT

A handwritten signature in black ink, appearing to read "Benjamin Cunningham", written over a horizontal line.

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