



Alabama Department of Environmental Management
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December 4, 2018

Mr. Don Sims, General Manager
West Morgan – East Lawrence Water and Sewer Authority
Post Office Box 2254
Decatur, Alabama 35609

RE: Robert M. Hames Water Treatment Plant
PFAS Issues

Dear Mr. Sims:

ADEM is concerned with ensuring your customers have access to clean, safe drinking water. It is vitally important that your customers have confidence that the water they drink meets all health-based drinking water standards. To that end, we are committed to working cooperatively with you towards addressing your customers' concerns.

We have reviewed your letter of October 24, 2018, which indicates that it summarizes the meeting on August 22, 2018 with representatives of West Morgan – East Lawrence Water and Sewer Authority (WMEL) and ADEM staff. The letter also poses a series of questions to the Department.

The Department does not concur with much of the summarization of points “discussed and clarified” during the meeting, and would point out the following:

- The U.S. Environmental Protection Agency (EPA) issued its lifetime drinking water health advisories for Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS) on May 19, 2016. The advisories provided information on human health effects from a lifetime of exposure to PFOA and PFOS from drinking water. These advisories are non-regulatory.
- The health advisory levels were set to be protective over a person's lifetime, and are inappropriate for use as acute toxicity values.
- The Alabama Department of Public Health's (ADPH) news release on May 20, 2016 (copy attached) listed eight systems where test results of drinking water were above the EPA health advisory levels. It summarized EPA's recommendations but did not make any further recommendations or impose any requirements on drinking water systems. It was WMEL's decision to install treatment and to advise its customers to not drink its water.



- ADEM is unaware of any definitive studies showing the effectiveness of granulated activated carbon (GAC) to remove all per- and polyfluoroalkyl substances (PFAS); at this time the primary focus in Alabama has been on PFOA and PFOS. Pilot studies at the other two drinking water utilities installing treatment for PFAS in Alabama have shown GAC to be effective for removal of PFOA and PFOS. The EPA Drinking Water Treatability Database (<https://oaspub.epa.gov/tdb/pages/general/home.do>) provides additional information on GAC for PFAS removal.
- Anecdotal evidence tends to point to GAC as the most common treatment technique utilized for removal of PFAS from drinking water. The spent carbon is regenerated through incineration, thus destroying the removed PFAS. The two other known treatment processes for PFAS – ion exchange and reverse osmosis – generate wastes that must be disposed of appropriately.
- You state that WMEL has also considered purchasing finished water from other system(s) where PFAS has not been a concern. If this is a viable option, this would eliminate the need for costly treatment, and if applicable, eliminate the disposal of waste that could potentially be subject to environmental regulations in the future.
- You state that reverse osmosis is the most cost-effective option available to you. While it is widely considered to be the most effective technique for removing many contaminants, including PFAS, other utilities have found it to be cost prohibitive.
- At this time, the type of treatment selected rests with WMEL. If WMEL chooses to install additional treatment, the Department would not expect to have regulatory issues as long as the selected option meets applicable federal and state regulations. You should keep in mind that PFAS regulatory information is evolving and regulatory requirements are expected to develop over time.
- If reverse osmosis is selected and the waste stream is proposed to be discharged to a surface water, an NPDES permit will be required. Additional information would be required to conduct a complete evaluation and develop proposed permit conditions; however, in the absence of water quality standards for PFAS the Department would expect that the permit would contain conditions for monitoring selected PFAS and implementation of feasible methods to minimize the discharge of PFAS. In the future, if federal effluent guidelines or water quality standards for PFAS are established additional requirements may be imposed.

In response to your questions, we offer the following:

1. *Do you anticipate that the Health Advisory on PFOA and PFOS will become a regulation? If so, when?* EPA must make a regulatory determination as the first step in setting new drinking water standards. Should they determine that new standards are necessary for PFOA and PFOS, we would expect the development of those new standards to be a multi-year process.

2. *Do you anticipate that EPA will issue additional Health Advisories on other PFAS compounds in drinking water? If so, when and which PFAS's?* EPA has recently published draft toxicity values for perfluorobutane sulfonate (PFBS) and hexafluoropropylene oxide (HFPO) dimer acid and the ammonium salt of HFPO dimer acid (collectively known as GenX). ADEM has not been advised if or when EPA will issue health advisories for these or any other PFAS.
3. *Does ADEM anticipate issuing any regulatory limits on PFAS's if EPA does not?* ADEM does not have the necessary information and resources to establish its own health-based drinking water standards. Like most other primacy agencies, we rely on EPA to set drinking water regulatory standards.
4. *In the new NPDES discharge permit required for a reverse osmosis plant, what compounds would you expect to be regulated and what would you anticipate the discharge limits to be for the Tennessee River?* As noted above, additional information would be required for the Department to develop proposed permit limitations (e.g., application forms, waste load allocations, etc.). However at this time, in the absence of water quality standards for PFAS, the proposed permit would likely require monitoring for specified PFAS, as well as a requirement for implementation of feasible methods to minimize the discharge of PFAS. With regard to other pollutant parameters, reverse osmosis discharge permits often require limitations and/or monitoring for pH, total suspended solids, total recoverable iron, total residual chlorine, total phosphorus, total recoverable aluminum, total organic carbon, total dissolved solids, and chloride as these are often pollutants of concern or are an indication of proper operation and maintenance.
5. *Do you anticipate that other upstream utilities and/or industries will receive PFAS discharge limits similar to what will be imposed on WMEL when we build the R-O plant? Or will they continue to be allowed to discharge PFAS's into the Tennessee River upstream of our drinking water intake?* As discussed above, in the absence of water quality standards for PFAS, at this time the Department has taken the general approach in NPDES and SID permits to monitor specified PFAS and to require implementation of feasible methods to minimize discharges of specified PFAS.
6. *Are you aware of any better and more cost effective water treatment technology than reverse osmosis for the protection of our customers?* We are not aware of a treatment technology that is more effective at removal of PFAS than reverse osmosis. However, some other utilities (including the only other two drinking water systems in Alabama to treat for PFAS) have determined that GAC is more cost effective.

Based on your analysis of options currently under consideration by WMEL, it appears it would be in the best financial interests of WMEL customers – and ADEM would recommend – that WMEL seriously consider merging with another drinking water utility or becoming a purchase

water system. Such an option could also help restore customer confidence in the quality of their drinking water, since confidence reportedly has been severely damaged in recent years.

Should you have any questions about this matter, please contact Mr. Aubrey White of my staff at (334) 271-7774.

Sincerely,

A handwritten signature in blue ink, appearing to read "Lance R. LeFleur".

Lance R. LeFleur
Director

cc: Glenda Dean
Aubrey White
Daphne Lutz

Attachment: May 20, 2016 ADPH News Release



Health Department responds to EPA Health Advisories impacting north Alabama water systems

FOR IMMEDIATE RELEASE

CONTACT:

John Guarisco, Ph.D.
(334) 206-5971

The Alabama Department of Public Health is working with the Alabama Department of Environmental Management (ADEM) and federal agencies to determine any potential hazards related to perfluorinated compounds in drinking water in eight north Alabama water systems.

On May 19, 2016, the Environmental Protection Agency (EPA) issued a final health advisory for perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). These compounds are man-made chemicals that resist heat, oil, stains, grease and water. They are found in products such as nonstick cookware, carpet protection products, firefighting foams, and waterproof clothing.

PFOS and PFOA in drinking water are usually from facilities that manufactured these compounds and industries that used them in their manufacturing processes. Water systems in Alabama where tests have shown concentrations of PFOS and PFOA to be above the newly released health advisory level are as follows:

- West Morgan-East Lawrence Water Authority
- Gadsden Water Works and Sewer Board
- Centre Water and Sewer Board
- V.A.W. (Vinemont Anon West Point) Water Systems Inc.
- West Lawrence Water Co-op
- Northeast Alabama Water District
- Rainbow City Utilities Board
- Southside Water Works and Sewer Board

According to the EPA, the final health advisory is based on scientific studies and was developed to protect sensitive populations such as pregnant women, breast-fed infants and formula-fed infants whose formula is prepared with tap water. The health effects of exposure in the general

population are not totally clear at this time, but the health advisory level will be protective for them as well.

EPA's health advisories recommend that pregnant and breast-feeding mothers served by the identified water systems consider using alternate sources of drinking water. EPA further states that for formula-fed infants, it is advisable to consider using formula that does not require adding water. Other people served by these systems may also consider these steps.

Exposure to PFCs in drinking water is primarily from ingestion. PFCs are not removed from water by boiling. Other household uses of water such as showering, bathing, laundry and dishwashing are not a concern.

For the last three years, the levels of PFOS, PFOA and emerging contaminants in surface water have been monitored in all drinking water systems serving more than 10,000 people and in selected systems serving fewer people. ADPH will continue to review all studies and recommendations related to ingestion of these chemicals through public water supplies.

ADEM is working with the named water systems to collect additional monitoring data where appropriate and to identify methods to reduce the water concentration of PFCs to a level below the final health advisory recommendation.

State Health Officer Dr. Tom Miller said, "We continue to use the best information available to make recommendations to protect the public."