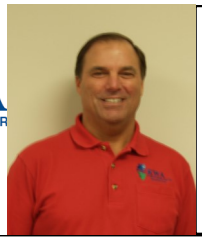
Technical Assistance Bulletin



NRWA Files Groundbreaking Class Action Lawsuit

By: Don Craig, Deputy Director

December 2020 Newsletter

As many of you are already aware, PFAS are at the forefront of many concerns for public water systems, and other entities across the nation…and in fact, the world. What you may not be aware of, our 'parent' organization, the National Rural Water Association (NRWA) has filed a class action lawsuit in regard to PFAS against certain companies that may have contributed to contamination of water supplies. During the last year in our quarterly magazine, Water Ways, we have had articles to bring attention to the PFAS issue. In the 2019 Fall edition, NRWA's Carol Booth had an article about the PFAS contamination and what it means and entails. Then recently in our 2020 Fall edition, one of our board members, Jay Bell, contributed and article about PFAS and how it is being addressed here in Illinois by IEPA, and the local affects and concerns that type of contamination may cause in our own state. Readers can go online to the IRWA website (ILRWA.org) and link into our publications to read those articles.

What I wanted to add to the subject, as I mentioned before, is the moving forward of legal action by NRWA to potentially help rural community systems across the nation that may be or have been affected. In NRWA's own statement on their website:

"The National Rural Water Association (NRWA) has joined with the law office of Napoli Shkolnik PLLC to bring together utility systems from across the country that have concerns or have been affected by PFAS contamination. This potential landmark contamination case could help water and wastewater systems recoup money spent on treatment and remediation. Napoli Shkolnik will represent clients in any state who are dealing with contamination of public water supplies."

(Here is the actual official Press Release prepared for NRWA by the law firm):

NRWA Files Groundbreaking Class Action Lawsuit Against PFAS Manufacturers for Making, Selling Toxic Chemicals

The National Rural Water Association ("NRWA") filed a lawsuit today on behalf of and its members now dealing with unregulated chemicals in their drinking water. The NRWA is a nonprofit organization dedicated to training, supporting, and promoting the water and wastewater professionals that serve small communities across the United States.

The lawsuit seeks money for testing and treatment along with other damages and penalties from the chemical manufacturers, The 3M Co., Tyco Fire Products L.P., National Foam, Inc., Buckeye Fire Protection, Chemguard, E.I. Du Pont De Nemours and Company ("DuPont") and The Chemours Company. These manufactures developed, marketed, and sold perfluorooctanoic acid and perfluorooctane sulfonate ("PFAS") that can be found in products such as firefighting foam, household and food products, industrial sites as well as landfills across the country.

The NRWA devotes substantial time to train and assist 49 affiliated State Rural Water Associations that currently have over 31,000 utility system members. The NRWA and its members will be forced to expend significant resources to test and remediate groundwater contamination by virtue of defendants' past practice of allowing hazardous chemicals, including perfluorooctanoic acid and perfluorooctane sulfonate ("PFAS"), to be released into the groundwater.

Aqueous film-forming foam (AFFF) is used for fire suppression, particularly at municipal airports and Air Force bases for training purposes and to combat jet fuel spills. However, many AFFF products contain PFAS. PFAS contamination also results from carpet, metal plating, paper, plastics, and textiles manufacturing. Human exposure to these toxic substances, through use or contaminated drinking water, can lead to an increased risk for testicular cancer, kidney cancer, serious thyroid problems and/or ulcerative colitis.

"The corporations we're suing today knew full well the health and environmental risks associated with PFAS. It should not be up to NRWA members across the country to pay the extensive costs to test, treat, and remediate these contaminants" said Paul J. Napoli. "These companies betrayed the people. They knew the harm their products could cause yet hid this from both the government and the public, leaving many to pay for the consequences," he continued.

Filed [today] in D.C., the five-count complaint alleges that the defendant companies manufactured, marketed and sold their AFFF products for decades despite knowing the significant threat they posed to the environment and human health. There is uncertainty across the country as to how communities can afford to test and treat PFAS contamination in the absence of certain State or Federal standards. This lawsuit could provide a mechanism for addressing and resolving those concerns so costs to investigate and remediate are not borne by the American taxpayers.

We strongly encourage you to contact the NRWA or Napoli Shkolnik PLLC for more information on how to become involved in this litigation.

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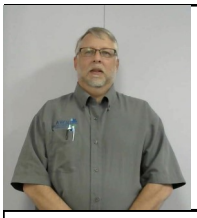
All systems that may have been affected to date or have concerns of potential contamination, and want possible inclusion into the class action lawsuit, please feel free to access NRWA's webpage dedicated to the matter. That direct webpage link through NRWA's website is: www.nrwa.org/issues/pfas

Or, if you have a problem with that link, you may indirectly access it through the IRWA website at: www.ilrwa.org/PFAS.html



Why a Nitrification Plan?
Provided by: Dave McMillan, Training Specialist

As I travel the state, I continually get this question. Maybe this is because many people know my background and know that I had a role in nitrification action planning (NAP) becoming a regulatory requirement in Illinois. Maybe it is because folks are overworked, underpaid, frustrated by a "new" requirement, and need to vent. Finally, maybe it is because water supply officials just do not understand why there is a need for controlling nitrification in their respective systems.

The purpose of this article is to attempt to explain what the NAP regulation is and why it may be one of the more significant health-based regulations to come about in the last several decades.

Why did the Illinois Environmental Protection Agency (EPA) make a recommendation to the Illinois Pollution Control Board (IPCB) for this regulation?
The technical and legal staff of the Illinois EPA had been involved in several incidents where nitrification in water supply distribution systems had become an issue. These water systems experienced difficulties that could have become a health risk if prompt corrective actions had not been taken by respective water supply officials. Generally, these water systems experienced loss of disinfectant residuals, positive total coliform (TC) detections (remember, TC are non-harmful indicator bacteria), taste/odor complaints and (in some cases) difficulties controlling corrosion in their customers plumbing systems. These nitrification related concerns were leading to violations of state (and federal) regulations including the TC and lead and copper rules.

Additionally, the staff of the Illinois EPA and the Department of Public Health observed that uncontrolled disinfectant residuals were contributing to pathogen outbreaks around the country. Such insidious culprits as Legionella nemophila and naegleria fowleri were causing illnesses and deaths around the country (including legionella outbreaks in Illinois). Both state Agencies believe that control of disinfectant residuals was paramount to protecting public health. The IPCB apparently concurred and in 2019 NAP became part of the Design Operation and Maintenance Criteria for community water supplies in Illinois.

What does the regulation say?

TITLE 35, CHAPTER I, PART 604, Section 604.140 Nitrification Action Plan states that "Any community water supply distributing water without a free chlorine residual must create a Nitrification Action Plan (NAP). The NAP must: a) contain a plan for monitoring total ammonia-N, free ammonia-N, nitrite-N, nitrate-N, monochloramine residual, dichloramine residual, and total chlorine residual; b) contain system specific levels of the chemicals in subsection (a) when action must be taken; c) contain specific corrective actions to be taken if the levels in subsection (b) are exceeded; and d) be maintained on site and made available to the Agency, upon request."

Is the Illinois EPA going to look at my plan and my data (aka., are they going to enforce this requirement)?
Illinois EPA's inspectors and IRWA's circuit riders attended a regulatory training program in January of 2020 at Southern Illinois University- Edwardsville's Environmental Resources Training Center. At this time, the Illinois EPA indicated that the regulation must be complied with (as with any other State regulation). The Illinois EPA further indicated that compliance with this regulation would be evaluated (as most other design/operation/maintenance standards are) at the time of water system's engineering evaluation (sanitary survey). The Illinois EPA did provide a caveat to this general rule of thumb and indicated that enforcement of the regulation could also result from circumstances that dictated an expedited compliance assurance schedule (e.g., a water system experiencing uncontrolled nitrification deemed to have the potential to create a health risk).

What does my water system need to do?
The first thing to do is determine if you are chloraminating. If your water system can document that you always maintain a free chlorine residual, you will not have to develop and implement a nitrification action plan. You will need to review your raw water quality and make sure that you are reaching "break point" and establishing a free chlorine (Cl_2) residual. If your source water has free ammonia, be prepared to show your Illinois EPA inspector your chemistry and math.

Remember, competition exists for chlorine and you must overcome rival reactions. Generally, chlorine reactions follow this sequence: Iron will consume 0.64 times its concentration (mg/l) in Cl_2.; Manganese will consume 1.3 times its concentration (mg/l) in Cl_2.; Hydrogen Sulfide will consume 2.2 times its concentration (mg/l) in Cl_2.and Free Ammonia 7.6 times its concentration (mg/L) in Cl_2..

If you are chloraminating (you have too much free ammonia in your source water to overcome or you are intentionally feeding ammonia to form monochloramine), you will have to develop a NAP and implement a monitoring program as described in the regulation. Follow the following links to gain additional information (or contact your circuit rider for assistance):
For IRWA NAP templates and FAQ sheets: http://www.ilrwa.org/Downloads.htm and

For Illinois EPA Sample Collector Handbook NAP Chapter: https://www2.illinois.gov/epa/topics/compliance-enforcement/drinking-water/Documents/NAP-Handbook-final.pdf

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Water Quality in Storage Tanks
By: Roger Noe, Circuit Rider

We are coming to the end of year 2020. This has been the year of the pandemic COVID-19, stay at home orders, lock-downs, and being required to wear masks to enter businesses. Traveling throughout the southern part of the state has been different this year as some offices have been closed, and it has seen more requests for issues than just stopping in to visit with operators like usual. I have been actively helping operators with implementing the Nitrification Action Plan. I have also had several calls about water quality issues in the water storage tanks. For example, I have seen where the tank has not been cycling or the water has been bypassing the tank.

The AWWA estimates 65% of all potable water tanks have some sort of water quality problems. Some of the issues might be inlet and outlet design, short circuiting, water age issues, temperature stratification, dead zones, loss of chlorine residual, nitrification event, and DBP formation (TTHM's). These issues will most likely occur during the summer months when the temperature increases, but it can happen year around. The loss of chlorine residuals could happen in the matter of a few days, especially if the chlorine to ammonia ratio is incorrect. The best ratio is chlorine to ammonia 4:5 to 1, but it also depends on the source water. Free ammonia can nitrify which can form nitrites and nitrates. Water age from the tank not cycling frequently is a major issue with water quality issues in the storage tank.

Temperature stratification is when there are different layers of water in the storage tank. The top layer is warmer and lighter, bottom layer is cold and heavier, and the middle has a boundary of layers. The only way to know for sure is to have temperature probes at different levels in the tank to check the temperature of each specific layer. The bottom of the tank could also have a biofilm buildup.

Water age and cycling of the water is what I have seen to be the major issue this year. I was called to one location where the chlorine in the tank was just at the minimum level for total chlorine. We ran several other tests, and it was determined nitrification was not happening in the water system. For the next step, we tested chlorine residuals on either side of the tank and found them to be at a satisfactory level. The determination was that the water was bypassing the tank. The operator had to make some operational changes to have the tank properly cycle. Another situation I was called to was one where chlorine was minimal in the water mains and a tank. I looked at the SCADA system and noticed the tank had not had any usage out of it for 2 weeks. That issue was not enough water was being used to have water turn over in the water mains and in the storage tank. The SCADA is a great tool for being able to see water levels and pump run times to see the flow of water into the tank and out of the tank.

If you are wanting to prevent problems with your storage tank, this is what I would recommend: routine cleaning and inspecting the tank for any issues, reducing your water age by cycling the tank as much as possible without causing issues with quantity of water for fire protection, cycling of the tank at only a foot most likely will not be adequate, tank cycling should be around 5 to 10 ft if possible and testing more frequently of chlorine residuals at the tank and surrounding area. This is where the nitrification plan will come into effect, more tests will help to determine the cause of the issue. The nitrification testing consists of chlorine, monochloramine, free and total ammonia, nitrates, and nitrites. The option is adding a mixing system to the tank. There are several different options of mixers.

In conclusion, water quality is much more important than the quantity of water in the water system. If you have any issues or questions do not hesitate to call your circuit rider.

Stay safe and Happy Holidays!

HAPPY HOLIDAYS FROM THE IRWA BOARD & STAFF

(continued from page 2)

Is this going to cost my community money?
The short answer is yes. You will need to purchase testing equipment, reagents and devote time to routine testing. In addition, when you discover you have an issue (which many of you will) your community is going to have to take corrective action to prevent the possible health risks that come with loss of disinfectant residuals. Likely, you are going to find that you will need to Increase flushing (directional flushing with scouring velocity), decrease dead-ends in distribution system (looping mains and auto-flushers), and manage stored water. If you don't have the capability to increase turnover of water in your storage tanks, you need to plan to spend money on such things as mixers, altitude valves, electrically controlled valves, simple SCADA, etc. You may even need to consider alternative disinfectants (e.g., chlorine dioxide), pH adjustment and biocides (though the jury is still out on these chemicals).

WHY A NITRIFICATION ACTION PLAN?
Because it is the right thing to do to protect your customers!

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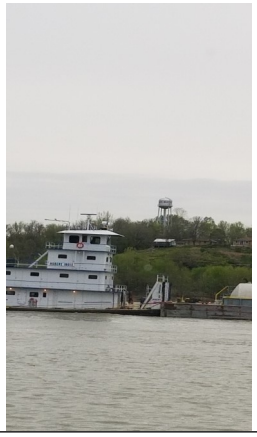

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GPS/GIS MAPPING SERVICES

Through the implementation of GPS & GIS technology, IRWA can effectively produce hard copy and digital maps. With this service available from IRWA, utilities can attain new and accurate maps to better manage their water, wastewater, and storm sewer assets.

The printed maps can be large-scale wall maps up to 36”x48” showing utility features with the desired layers (aerial photos, streets, topography, etc.).

The digital map files on a CD, can be viewed and printed with free software that IRWA will provide and install on a utility computer. The software allows you to view and click on a system feature (such as a valve, hydrant, meter pit, curb stop, manhole, lift station, treatment facility, etc.), and pull up attribute data about each…as well as several other capabilities such as printing, zooming, etc.

Also, IRWA has a working relationship, with DiamondMaps.com, to put your IRWA project maps, on their server, for mobile viewing with a smartphone or cellular capable tablet….including editing capability. This is at no extra charge to the system for the first year’s subscription. Continuance of the Diamond Maps service after the first year, is at the utility’s discretion.

Payment for GIS services, is a set charge per feature, with IRWA members receiving an automatic 30% discount, and even more of a reduction with bigger projects. More information is also posted on our website at: www.ilrwa.org, or you may call our office at 217-287-2115.