Delaware Office of Drinking Water

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TAP TALK H2Oh!

Tapping Into Good Health

Division of Public Health • Summer 2013

Reducing Children's Exposure to Lead in Drinking Water

By Laurie Poore

Lead exposure poses a great risk to our children, especially those younger than 6 years of age. A child's growing body absorbs more lead compared to an adult, and their brain and nervous system is more sensitive to the damaging effects of this metal. Behavioral and learning problems, lower IQ, hearing problems, and slowed growth are a few of the risks our children face when exposed to even just small amounts of lead. The damaging effects of lead cannot be undone after a child has been exposed.

Although we may have our homes and drinking water tested for lead, most of our children spend the majority of their day at schools, and/or day care centers. Schools and day care facilities that have their own drinking water supply are regulated by the Lead and Copper Rule, unlike those served by a municipal water system. The Lead Contamination Control Act of 1988, aimed at testing and replacing water coolers with lead-lined storage tanks, or other lead parts, did help to identify and reduce lead in drinking water at all schools and day care centers. However, there is no current requirement under the Lead and Copper Rule mandating that drinking water be tested for lead in schools and daycares served by a public water system.

Lead primarily enters tap water through the corrosion of plumbing materials and fixtures, and therefore, lead levels may vary from tap to tap within a building. Because you cannot see, taste, or smell the presence of lead, testing is the only way to determine elevated levels. The EPA has begun a voluntary testing program for lead targeting all schools and child care centers. This program recommends that these facilities periodically collect 250 ml, first-draw samples from all water outlets in the building, especially those used for drinking and preparing food or baby formula. If any water fountain or faucet has a lead level of 20 ppb or more, it should immediately be taken out of service.

As a municipality, I encourage you to share this information with all schools and child care centers within your distribution system. Likewise, if you are a school or day care with your own drinking water source, please consider voluntarily testing for lead in addition to meeting the requirements of the Lead and Copper Rule. To find out more about this voluntary lead-testing program, please call Laurie Poore, Lead and Copper Rule manager with the Office of Drinking Water, at 302-741-8598. Thank you for helping to provide our children with quality drinking water.

Protect Your Groundwater Day
September 10, 2013

Did you know that 99 percent of all available freshwater comes from aquifers underground, and Americans use 14,600 million gallons of groundwater per day from public water supplies? The National Ground Water Association is sponsoring Protect Your Groundwater Day on September 10, 2013 to inform people about different ways they can protect groundwater. Visit www.ngwa.org for more information about groundwater and groundwater protection.

DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health
Office of Drinking Water

The Administrator's Corner

By Ed Hallock

Program Administrator, Office of Drinking Water

Well the interesting times continue in the Office of Drinking Water (ODW). I noted in the Spring TapTalk newsletter that Jimmy Porter, a 25 year environmental control technician in ODW decided it was time to retire and he left us on June 28th. In addition, Rick Relford, a part-time environmental control technician for the last seven years also decided it was time for him to enjoy some free time and he retired on June 28th as well. I want to wish both of these gentlemen much happiness in their retirements.

I also wish to express my best wishes to another long-time employee who has decided to see how things work on the other side of the well casing. Anita Beckel, program manager for the Public Water System Supervision Program, has accepted a position at DNREC overseeing the source water protection office. Anita worked for ODW for more than 17 years and I have learned much from her. She will be sorely missed but I take comfort in knowing she will be working for our sister agency helping to protect our sources of drinking water.

Speaking of protecting our drinking water, I want to congratulate the Delaware Water Operator of the Year, Robert Windsor from the Town of Delmar. Mr. Windsor was presented the award at the Operator of the Year Awards Ceremony held on May 2, 2013 at Delaware Technical Community College in Georgetown. The Environmental Training Center hosts the ceremony annually where awards are presented to the Wastewater Operator of the Year, Water Operator of the Year, On-Site Professional of the Year and a Lifetime Achievement Award. This year the Lifetime Achievement Award was renamed the Allen J. Williams Lifetime Achievement Award in honor of Jerry Williams who was instrumental in creating the Delaware Environmental Training Center (ETC) in the 1990's and was its director up until his retirement last year. I have had the pleasure of knowing Jerry from the beginning of the ETC and no one is more deserving of the honor bestowed on him. No one has done more to protect our environment from both ends of the pipe than Jerry. I want to wish him the best in his well-deserved retirement.

Drinking Water operators are the critical first line of defense in protecting drinking water. I want to encourage all operators to consider nominating their fellow operators or even themselves for operator of the year. I know we have many excellent operators out there because we have very high compliance rates.

I am sure that many of you may be doing some of the following items that would show your qualifications as a potential operator of the year: 1) work being done in preparation for new rule implementation (i.e., ST2/LT2, GWR); work reflects consistent compliance with regulatory requirements at the public water system; 2) innovative approaches to cost reduction (e.g., asset management, environmental management systems, optimizing treatment plant performance and water conservation (e.g., energy & efficiency)); 3) community outreach – e.g., public tours of water plant, visit schools, utilizing media to spread message about healthy, safe, and potable water; 4) peer recognition – speaks to the integrity, ethical and technical level of the nominee (e.g., previous awards received); or, 5) other special efforts or significant achievements. A letter is sent to each operator in January with the details of the nomination process. Please consider nominating someone.

Consumer Confidence Report (CCR) News: Violations

Most CCRs submitted to ODW meet state and federal regulations. Last year, 25 violations were issued to community water systems (CWS) for CCRs that failed to meet regulations. The violations fell into two categories: major and minor violations.

A major violation is termed a CCR Report Violation. This type of violation occurs when a CWS fails to produce and deliver a copy of the CCR to the public, and to the state by the specified dates (July 1st and July 10th respectively). In addition, a CCR Report Violation will be issued to a CWS in circumstances where the state finds the report significantly deficient in content.

A minor violation is termed a CCR Adequacy/Availability/Content Violation. This violation occurs when the CWS fails to include the required language, and/or content. A minor violation will also be issued when the CWS fails to provide a Certification of Delivery to ODW.

Violation Notice and Resolution

A CWS will receive a written notice of the violation from ODW. The violation is entered into ODW's data base and is available to the general public. The notice will state what steps the CWS needs to take to resolve the violation. Once the violation is resolved, it is noted in the data base.

Typically, a major violation is resolved by producing and distributing the CCR to the CWS's consumers. If the major violation was issued due to significantly deficient content, the CWS will need to make the necessary corrections and redistribute the CCR.

Minor violations are typically not resolved until the following year. ODW will ask the CWS to make the necessary changes to the CCR template so that the following year's CCR contains the changes requested by ODW. An exception to this is when the CWS distributed the CCR digitally. In that case, ODW will ask that the minor changes be completed and the new CCR posted on the web.

Training Event: Lead & Copper Rule

September 5, 2013, 9:00 a.m. – noon
ODW office in the Edgehill Shopping Center

Understanding the Lead and Copper Rule: A System's Guide to Monitoring and Reporting Requirements. During this training session, we will explain the complex regulations of the LCR to better help personnel from a community or non-transient non-community water system understand the various aspects of this rule. We will discuss several topics including: sampling schedules, collection procedures, 90th percentile calculations, reporting requirements, and follow-up actions after an exceedance. To reserve your seat, please email Keith Harrison at keith.harrison@state.de.us or call 302-741-8630. Any Water Operator will receive 3 CEUs

Breakpoint Chlorination: Controlling Chlorine Taste and Odor in Your Water Supply

By Keith Harrison

Problem: Tap water from a chlorinated system smells like chlorine.

Solution: The operator may need to add more chlorine!

Although the above scenario may be oversimplified, the concept deserves a closer look. Chlorine taste and odor problems may be a result of inadequate chlorine treatment.

This short essay is a brief description of the chlorination process in reference to chlorine taste and odor issues. Proper chlorination depends upon a number of other factors such as the pH of the water and the other components naturally found in water such as iron, nitrogen, ammonia, and hydrogen sulfide among others.

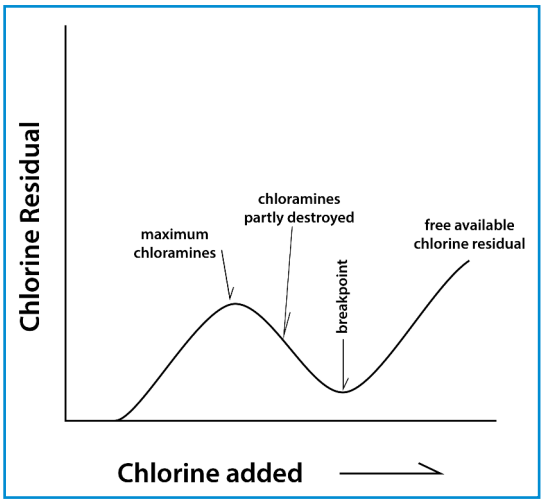
Chlorine Disinfection

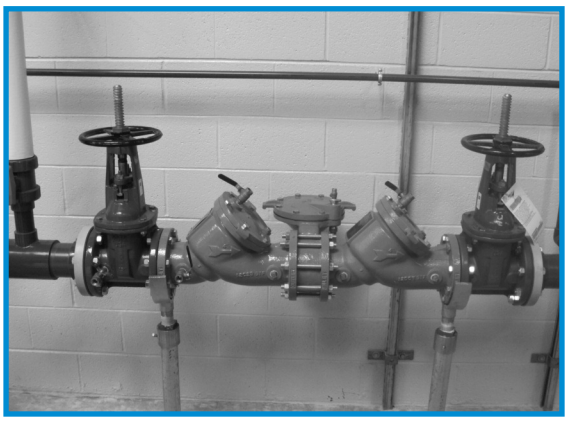
Chlorine, in the form of hypochlorite or chlorine gas, is often added to water as a disinfecting agent. When these chlorine compounds are added to water, a chemical reaction produces hypochlorous acid and a number of other compounds such as hydrochloric acid or sodium hydroxide. The key component of this reaction is the production of the hypochlorous acid, the disinfecting agent that will kill pathogens in water. Hypochlorous acid is otherwise known as free chlorine.

Chloramines are formed when free chlorine reacts with pathogens and other organic matter in ground or surface water. This is called the chlorine demand of the water. There are three main chloramines: monochloramine, dichloramine, and trichloramine. Chloramines are sometimes used as disinfectants since they are very stable; however, they are not as effective as the other forms of chlorine mentioned above.

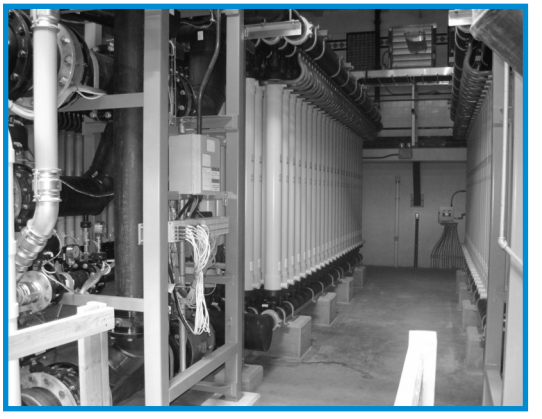
When chloramines are further exposed to free chlorine, they will breakdown into a number of other compounds. When it comes to taste and odor issues with chlorinated water, chloramines are the cause of most of these issues. So the resolution is to chlorinate until the chloramines are broken down. The point at which all the free chlorine has been utilized to disinfect the organic matter is known as the breakpoint. At this point, the chlorine demand of the water has been met. Since free chlorine does not have an odor, chlorine is added until there is a free chlorine residual left at the end of the distribution system.

Customer service hint: When responding to a customer about a chlorine smell or taste, be sure to simply tell them that you will adjust the chlorine. It may be very confusing to a customer if you tell them that you will add more chlorine!





State of the art backflow preventer at the Brandywine Treatment Plant



Membrane filtration at the Brandywine Treatment Plant. Shown: one skid consisting of 70 modules. The membrane filtration occurs inside the modules.

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Reminders/Notes

- Water system owners are required to notify the Office of Drinking Water (ODW) when making any changes to water system operations.
- Consumer Confidence Reports (CCRs) were to be distributed to your customers by July 1, 2013, and were due to ODW By July 10, 2013.
- As of July 8, 2013, approximately 40 community water systems submitted their CCRs/Certificates of Delivery to ODW digitally via email. This is the preferred method of submission to ODW. Confirmation of delivery is sent via reply email. Hard copies are not needed.
- All systems on reduced monitoring that are scheduled for lead and copper sampling in 2013 must collect all samples by September 30th. Report all results to ODW by October 10, 2013. For all systems on standard 6-month monitoring schedules, lead, and copper samples must be collected by December 31, 2013, and reported by January 10, 2014.

Upcoming Approved Sampler/Tester Trainings (AST)

AST Basic and Refresher trainings are conducted on a monthly basis (except December). Trainings will be held in the ODW offices at 43 S. DuPont Hwy in the Edgehill Shopping Center, in Dover. We will be glad to hold a training class at your facility if you have at least six people. For more information or to register, contact Keith Harrison at: Keith.Harrison@state.de.us.

Scheduled AST Trainings

AST Basic:	AST Refresher:
August 8, 2013	August 22, 2013
September 12, 2013	September 26, 2013
October 10, 2013	October 24, 2013
November 7, 2013	November 21, 2013

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