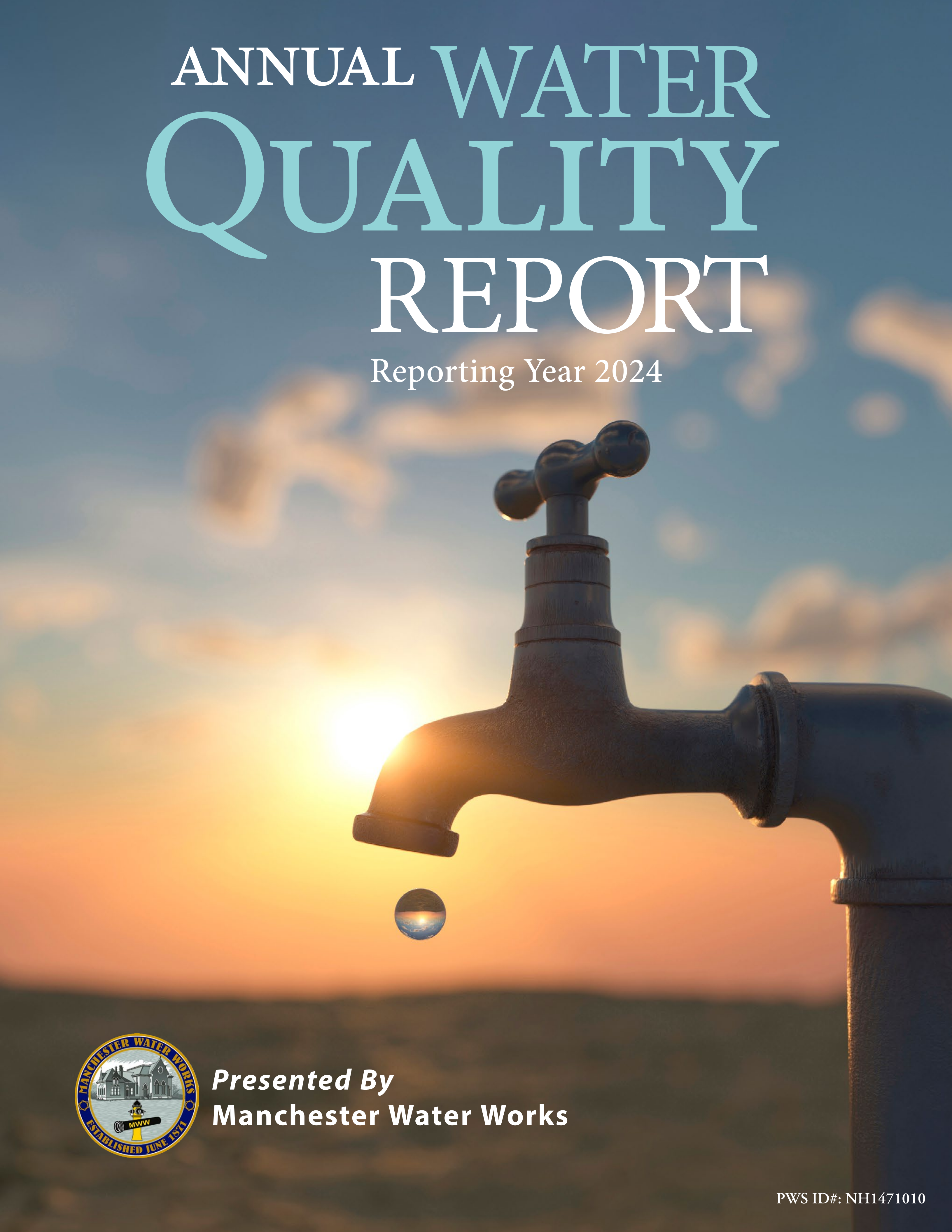
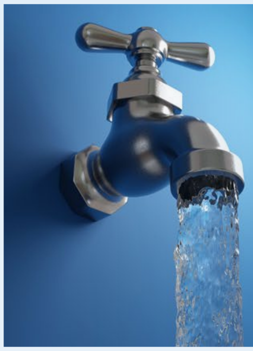


ANNUAL WATER QUALITY REPORT

Reporting Year 2024

Presented By
Manchester Water Works

PWS ID#: NH1471010



Our Commitment

We are pleased to present to you this year's annual water quality report. This report is a snapshot of last year's water quality covering all testing performed between January 1 and December 31, 2024. Included are details about your sources of water, what it contains, and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and providing you with this information because informed customers are our best allies.

Where Does My Water Come From?

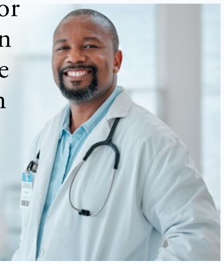
Since 1874 Lake Massabesic has served as the water supply for Manchester and portions of six surrounding communities. Recently we began serving communities to the south and east of Manchester, including portions of Salem, Hampstead, Atkinson, and Plaistow. In order to satisfy stringent state and federal drinking water regulations, the lake water is purified at Manchester's water treatment plant. This facility was completed in 1974 and has since been routinely updated with state-of-the-art equipment to improve quality control and operational efficiency; it was significantly upgraded in 2003 through 2006. Located adjacent to Lake Massabesic, the plant treats the city's water before it is pumped into a 500-mile piping network for distribution to homes and industries.

Beginning in August 2023, following completion of the new Merrimack River water treatment facility in Hooksett, an additional source of water from the Merrimack River was activated to provide a much-needed additional supply for our customers. This new facility produces water that meets or exceeds the high level of quality of water leaving our Lake Massabesic plant.

> **"Thousands have lived without love, not one without water."**
> *–W.H. Auden*

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health-care providers. U.S. Environmental Protection Agency (U.S. EPA)/Centers for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791) or epa.gov/safewater.



Community Participation

You are invited to attend our Water Board meetings and participate in discussions about your drinking water. A schedule of meeting times is posted at manchesternh.gov/wtr. Please call our office at (603) 792-2803 to confirm your intent to attend.

Source Water Assessment

In compliance with a federal mandate, the New Hampshire Department of Environmental Services (DES) performed a source water assessment of Lake Massabesic in September 2002. The assessment looked at the drainage area for the lake and ranked its vulnerability to contamination. Lake Massabesic received four high and four medium vulnerability ratings, while it ranked at low vulnerability for five additional categories. Concern was raised over the detection of methyl tert-butyl ether (MTBE), now prohibited, which came from reformulated gasoline. Concern was also raised over potential contamination sources on the watershed, such as highways. Overall, the report presents a positive picture of Manchester's water source and its condition. While Manchester Water Works has done its best to protect Lake Massabesic, we understand more than ever that we rely heavily upon the standards and practices of each citizen and each community on the watershed for their continued efforts to preserve this precious resource.

The complete assessment report is available for review at our website or at the DES Drinking Water Source Water Assessment page at https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/manchester.pdf. Please note, no Source Water Assessment was completed for the Merrimack River.

Questions?

For more information about this report, or for any questions relating to your drinking water, please call David G. Miller, P.E., Deputy Director, Water Supply, at (603) 792-2851 or email dmiller@manchesternh.gov.

Lake Massabesic Water Treatment Facility Process

Raw Water Pumping

Raw water from Lake Massabesic is conveyed through a 60-inch high-density polyethylene pipeline intake that extends 430 feet from the shoreline into a low-lift pump station constructed in 1997. The original intake and pump station, built in 1906 and renovated for raw water service in 1974, has been discontinued. A combination of four variable-speed pumps delivers raw water through a 48-inch pipeline to the rapid mix chambers. This pipeline is equipped with a soda ash feed point where pH and alkalinity are adjusted prior to coagulation.

Rapid Mixing/Coagulation

In the rapid mix chamber, aluminum sulfate, the primary treatment chemical, is added to begin the process of coagulation. Two rapid mix chambers are configured in series with the capability of adding the coagulants into either or both chambers. High-speed mixers ensure complete dispersion of these chemicals, enabling them to react with the natural dissolved and particulate matter in the water and causing it to collide and form larger particles.

Flocculation

Flow from the rapid mix chambers is distributed evenly into each of the four flocculation basins. The flocculation basins are configured in two stages separated by a baffle wall. The second-stage mixers are set at a slightly slower speed than the first-stage mixers.

Sedimentation

The sedimentation process is achieved by allowing the water to flow slowly through a long, deep, quiescent basin that allows sufficient time for the floc particles to settle to the bottom and form sludge, a treatment process by-product. Sludge is periodically removed by isolating one of the four parallel basins each week, decanting, and pumping the sludge layer to a lagoon where it is eventually dried and moved to a permitted landfill.

Intermediate Ozone

Settled water flows into an intermediate pump station, where it is lifted into the ozone contact chambers. Ozone is a powerful oxidant and disinfectant that removes color, taste, and odor along with killing or inactivating harmful organisms in the water. Ozone is generated on-site by passing a high-voltage electric current across a dielectric discharge gap through a pure oxygen stream. A combination of three 500-pound-per-day ozone generators produces the required ozone gaseous stream that is injected into four ozone contact chambers through fine bubble diffusers. The contact chambers provide the necessary time for completion of the ozone reaction. Residual (excess) ozone is removed from the water by applying sodium bisulfite before it exits the contact chambers and continues on to the filters. Excess ozone gas that accumulates above the ozone contact chambers is removed under vacuum through a thermal-catalytic ozone destruct process and vented to the atmosphere.

Granular Activated Carbon Filtration

Following intermediate ozone, the water passes through one of eight deep bed granular activated carbon filters. Each filter contains six feet of biologically active media that completes the physical-biological removal process.

Chemical Addition

After filtration, sodium hypochlorite is added before, and aqueous ammonia is added into, the hydraulic control structure in a closely controlled ratio (approximately 4.5 parts chlorine to 1 part ammonia) to form monochloramine, a residual disinfectant that minimizes disinfectant by-product formation and inhibits bacterial growth as water travels throughout the distribution system. Soda ash is added once again to raise the pH to prevent pipe corrosion and provide additional alkalinity. Phosphoric acid is also added for corrosion control. Finally, fluorosilicic acid is added for dental protection.

Clearwell and Finished Water Pumping

From the hydraulic control structure, water flows into a 700,000-gallon clearwell and finished water pumping station. A series of seven vertical turbine pumps (three for the low service pressure zone and four for the high service pressure zone) lifts finished water into the distribution system.

Merrimack River Water Treatment Facility Process

Raw Water Pumping

Raw water is a combination of groundwater and surface water that enters radial collector well laterals through a natural sand-and-gravel layer about 50 feet below the riverbed. A combination of three variable-speed pumps delivers raw water through a 20-inch pipeline three quarters of a mile to the water treatment facility.

Greensand Filtration

The treatment facility has four pressure filters filled with a coated media called greensand for manganese and iron removal. Prior to entering the greensand filters, the pH of the raw water is adjusted with caustic soda, and sodium hypochlorite is added to assist with preoxidation and media regeneration. These filters remove the majority of the manganese and iron to well below levels of concern. At regular intervals, the media in the filters are backwashed, and the solids that are removed from the filters are discharged to open-air lagoons on the property to be dried and properly disposed of at a later date.

Granular Activated Carbon Contactors

Flow from the greensand filters is distributed evenly into five granular activated carbon contactors, which are primarily used for taste and odor and to remove any remaining organics.

Ultraviolet Light Disinfection

Water from the granular activated carbon contactors next flows to three ultraviolet disinfection chambers for virus and pathogen inactivation. Sodium hypochlorite is added for disinfection before water flows to the clearwell.

Clearwell and Finished Water Pumping

Water flows from the ultraviolet area underground to a 500,000-gallon clearwell to provide contact time for adequate disinfection. Flows from the clearwell come back into the treatment facility, where finished water chemicals are added. Ammonia is added to form monochloramine, a secondary or residual disinfectant that minimizes disinfection by-product formation and inhibits bacterial growth as water travels through the distribution system. Caustic soda is added once again to raise the pH to prevent pipe corrosion. Phosphoric acid is also added for corrosion control, and fluorosilicic acid is added for dental protection.

Lead in Home Plumbing

Lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Manchester Water Works is responsible for providing high-quality drinking water and removing lead pipes but cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, or doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute-accredited certifier to reduce lead in drinking water. If you are concerned about lead and wish to have your water tested, contact Manchester Water Works at (603) 624-6494 or waterworks@manchesternh.gov. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at epa.gov/safewater/lead.

Exposure to lead in drinking water can cause serious health effects in all age groups. Infants and children can have decreases in IQ and attention span. Lead exposure can lead to new learning and behavior problems or exacerbate existing learning and behavior problems. The children of women who are exposed to lead before or during pregnancy can have increased risk of these adverse health effects. Adults can have increased risks of heart disease, high blood pressure, or kidney or nervous system problems.

To address lead in drinking water, public water systems were required to develop and maintain an inventory of service line materials by October 16, 2024. Developing an inventory and identifying the location of lead service lines (LSL) is the first step for beginning LSL replacement and protecting public health. The lead service inventory may be accessed by contacting us at (603) 624-6494 or waterworks@manchesternh.gov. Please contact us if you would like more information about the inventory or any lead sampling that has been done.

Fluoridation Information

Your public water supply is fluoridated. According to the CDC, if your child under the age of six months is exclusively consuming infant formula reconstituted with fluoridated water, there may be an increased chance of dental fluorosis. Consult your child's health-care provider for more information.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, in some cases radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

Organic Chemical Contaminants, including per- and polyfluoroalkyl substances, synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Think Before You Flush!

Flushing unused or expired medicines can be harmful to your drinking water. Properly disposing of unused or expired medication helps protect you and the environment. Keep medications out of our waterways by disposing responsibly. To find a convenient drop-off location near you, please visit bit.ly/3IeRyXy.

What Are PFAS?

Per- and polyfluoroalkyl substances (PFAS) are a group of manufactured chemicals used worldwide since the 1950s to make fluoropolymer coatings and products that resist heat, oil, stains, grease, and water. During production and use, PFAS can migrate into the soil, water, and air. Most PFAS do not break down; they remain in the environment, ultimately finding their way into drinking water. Because of their widespread use and their persistence in the environment, PFAS are found all over the world at low levels. Some PFAS can build up in people and animals with repeated exposure over time.

The most commonly studied PFAS are perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). PFOA and PFOS have been phased out of production and use in the United States, but other countries may still manufacture and use them.

Some products that may contain PFAS include:

- Some grease-resistant paper, fast food containers/wrappers, microwave popcorn bags, pizza boxes
- Nonstick cookware
- Stain-resistant coatings used on carpets, upholstery, and other fabrics
- Water-resistant clothing
- Personal care products (shampoo, dental floss) and cosmetics (nail polish, eye makeup)
- Cleaning products
- Paints, varnishes, and sealants

Even though recent efforts to remove PFAS have reduced the likelihood of exposure, some products may still contain them. If you have questions or concerns about products you use in your home, contact the Consumer Product Safety Commission at (800) 638-2772. For a more detailed discussion on PFAS, please visit bit.ly/3Z5AMm8.

What Causes the Pink Stain on Bathroom Fixtures?

The reddish-pink color frequently noted in bathrooms on shower stalls, tubs, tile, toilets, sinks, and toothbrush holders and on pets' water bowls is caused by the growth of the bacterium Serratia marcescens. Serratia is commonly isolated from soil, water, plants, insects, and vertebrates (including humans). The bacteria can be introduced into the house through any of these sources. The bathroom provides a perfect environment (moist and warm) for bacteria to thrive.

The best solution to this problem is to clean and dry these surfaces to keep them free from bacteria. Chlorine-based compounds work best, but keep in mind that abrasive cleaners may scratch fixtures, making them more susceptible to bacterial growth. Chlorine bleach can be used periodically to disinfect the toilet and help eliminate the occurrence of the pink residue. Keeping bathtubs and sinks wiped down using a solution that contains chlorine will also help to minimize its occurrence. Serratia will not survive in chlorinated drinking water.

Count on Us

Delivering high-quality drinking water to our customers involves far more than just pushing water through pipes. Water treatment is a complex, time-consuming process. Because tap water is highly regulated by state and federal laws, water treatment plant and system operators must be licensed and are required to commit to long-term, on-the-job training before becoming fully qualified. Our licensed water professionals have a basic understanding of a wide range of subjects, including mathematics, biology, chemistry, and physics. Some of the tasks they complete on a regular basis include:

- Operating and maintaining equipment to purify and clarify water.
- Monitoring and inspecting machinery, meters, gauges, and operating conditions.
- Conducting tests and inspections on water and evaluating the results.
- Maintaining optimal water chemistry.
- Applying data to formulas that determine treatment requirements, flow levels, and concentration levels.
- Documenting and reporting test results and system operations to regulatory agencies.
- Serving our community through customer support, education, and outreach.

So the next time you turn on your faucet, think of the skilled professionals who stand behind each drop.

Failure in Flint

The national news coverage of water conditions in Flint, Michigan, has created a great deal of confusion and consternation. The water there has been described as being corrosive; images of corroded batteries and warning labels on bottles of acids come to mind. But is corrosive water bad?

Corrosive water can be defined as a condition of water quality that will dissolve metals (iron, lead, copper, etc.) from metallic plumbing at an excessive rate. There are a few contributing factors, but generally speaking, corrosive water has a pH of less than 7; the lower the pH, the more acidic, or corrosive, the water becomes. (By this definition, many natural waterways throughout the country can be described as corrosive.) While all plumbing will be somewhat affected over time by the water it carries, corrosive water will damage plumbing much more rapidly than water with low corrosivity.

By itself, corrosive water is not a health concern; your morning glass of orange juice is considerably more corrosive than the typical lake or river. What is of concern is that exposure in drinking water to elevated levels of the dissolved metals increases adverse health risks. And therein lies the problem.

Public water systems are required to maintain their water at optimal conditions to prevent it from reaching corrosive levels. Rest assured that we routinely monitor our water to make sure that what happened in Flint never happens here.

Naturally Occurring Bacteria

The simple fact is bacteria and other microorganisms inhabit our world. They can be found all around us: in our food, on our skin, in our bodies, and, in the air, soil, and water. Some are harmful to us and some are not. Coliform bacteria are common in the environment and generally not harmful themselves. The presence of this bacterial form in drinking water is a concern because it indicates that the water may be contaminated with other organisms that can cause disease. Throughout the year, we tested many water samples for coliform bacteria. In that time, none of the samples came back positive for the bacteria.

Federal regulations require that public water that tests positive for coliform bacteria must be further analyzed for fecal coliform bacteria. Fecal coliform are present only in human and animal waste. Because these bacteria can cause illness, it is unacceptable for fecal coliform to be present in water at any concentration. Our tests indicate no fecal coliform is present in our water.

Tip Top Tap

The most common signs that your faucet or sink is affecting the quality of your drinking water are discolored water, sink or faucet stains, a buildup of particles, unusual odors or tastes, and a reduced flow of water. The solutions to these problems may be in your hands.

Kitchen Sink and Drain

Handwashing, soap scum buildup, and the handling of raw meats and vegetables can contaminate your sink. Clogged drains can lead to unclean sinks and backed-up water in which bacteria (i.e., pink or black slime growth) can grow and contaminate the sink area and faucet, causing a rotten egg odor. Disinfect and clean the sink and drain area regularly and flush with hot water.

Faucets, Screens, and Aerators

Chemicals and bacteria can splash and accumulate on the faucet screen and aerator, which are located on the tip of faucets and can collect particles like sediment and minerals, resulting in a decreased flow from the faucet. Clean and disinfect the aerators or screens on a regular basis.

Check with your plumber if you find particles in the faucet screen, as they could be pieces of plastic from the hot water heater dip tube. Faucet gaskets can break down and cause black, oily slime. If you find this slime, replace the faucet gasket with a higher-quality product. White scaling or hard deposits on faucets and showerheads may be caused by water with high levels of calcium carbonate. Clean these fixtures with vinegar or use water softening to reduce the calcium carbonate levels for the hot water system.

Water Filtration/Treatment Devices

A smell of rotten eggs can be a sign of bacteria on the filters or in the treatment system. The system can also become clogged over time, so regular filter replacement is important. (Remember to replace your refrigerator filter!)

Additional Information

MWW became a charter member of the Partnership for Safe Water in 1995 and, through volunteer efforts, helped shape the framework for how self-assessment and optimization guidance could be promoted and embraced nationally by utilities in the wake of the 1993 Milwaukee cryptosporidium crisis. As an active utility member, MWW embraced the importance and significance of the partnership as a natural fit as we continued striving to provide the safest and highest-quality water possible for our customers. A focus on achieving, maintaining, or exceeding partnership goals has become a critical measuring stick for ongoing improvements and utility growth going forward.

Manchester's Phase III self-assessment report was submitted to the partnership in late 2001, and we received the Phase III Director's Award in August 2002. MWW continued to collect and report annual partnership data over the next decade with an eye on Phase IV - Excellence in Water Treatment. In July 2011, our team submitted the Phase IV application demonstrating our path to optimization. MWW received notice in January 2012 that the Lake Massabesic water treatment plant would be recognized as the 11th facility in the nation to achieve Phase IV, a status we proudly maintain today.

David G. Miller, P.E.
Deputy Director
Manchester Water Works

Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council (NRDC), bottled water is not necessarily cleaner or safer than most tap water. In fact, about 40 percent of bottled water is actually just tap water, according to government estimates.

The FDA is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Further, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70 percent of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to $1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water. For a detailed discussion on the NRDC study results, visit https://goo.gl/Jxb6xG.

Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data is included, along with the year in which the sample was taken.

We participated in the fifth stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR5) program by performing additional tests on our drinking water. UCMR5 sampling benefits the environment and public health by providing the U.S. EPA with data on the occurrence of contaminants suspected to be in drinking water to determine if U.S. EPA needs to introduce new regulatory standards to improve drinking water quality. Unregulated contaminant monitoring data is available to the public, so please feel free to contact us if you are interested in obtaining that information. If you would like more information on the U.S. EPA's Unregulated Contaminant Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

REGULATED SUBSTANCES

				Lake Massabesic Water Treatment Plant		Merrimack River Water Treatment Plant			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2024	2	2	0.0092	0.0072–0.0112	0.00675	0.0055–0.008	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride (ppm)	2024	4	4	0.69	0.60–0.76	0.58	0.45–0.71	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs] (ppb)	2024	60	NA	1.9	1.2–3.1	1.9	1.2–3.1	No	By-product of drinking water disinfection
Nitrate (ppm)	2024	10	10	<0.2	0.021–0.2	0.377	0.020–0.510	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Nitrite (ppm)	2024	1	1	<0.2	<0.05–0.2	<0.2	<0.005–0.2	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perfluorooctanoic Acid [PFOA] (ppt)	2024	12	0	6.00	5.59–6.51	1.69	1.42–1.94	No	Discharge from industrial processes; Wastewater treatment; Residuals from firefighting foam; Runoff/leachate from landfills and septic systems
Total Organic Carbon [TOC] (ppm)	2024	TT[1]	NA	1.85	1.67–2.35	0.75	0.56–1.04	No	Naturally present in the environment
TTHMs [total trihalomethanes] (ppb)	2024	80	NA	2.2	1.1–4.0	2.2	1.1–4.0	No	By-product of drinking water disinfection
Turbidity[2] (NTU)	2024	TT	NA	0.057	NA	0.053	NA	No	Soil runoff
Turbidity (lowest monthly percent of samples meeting limit)	2024	TT = 95% of samples meet the limit	NA	100	NA	100	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	RANGE LOW-HIGH	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Lead (ppb)	2024	15	0	0.0011	<0.001–0.0131	0/106	No	Lead service lines; Corrosion of household plumbing systems, including fittings and fixtures; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	Lake Massabesic Water Treatment Plant AMOUNT DETECTED	Lake Massabesic Water Treatment Plant RANGE LOW-HIGH	Merrimack River Water Treatment Plant AMOUNT DETECTED	Merrimack River Water Treatment Plant RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2024	250	NA	24	7–41	71	65–83	No	Runoff/leaching from natural deposits
Copper (ppm)	2024	1.0	NA	0.1180	0.0047–0.162	<0.001	NA	No	Corrosion of household plumbing systems; Erosion of natural deposits
Fluoride (ppm)	2024	2.0	NA	0.69	0.60–0.76	0.58	0.45–0.71	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Manganese (ppb)	2024	50	NA	5.7	3.9–7.5	<0.001	NA	No	Leaching from natural deposits
pH (units)	2024	6.5-8.5	NA	7.90	7.71–8.03	7.73	7.50–7.82	No	Naturally occurring
Sodium (ppm)	2024	100-250	NA	52.6	41.9–63.3	52.25	45.9–58.6	No	Naturally occurring
Sulfate (ppm)	2024	250	NA	30.5	20–41	6.5	6–7	No	Runoff/leaching from natural deposits; Industrial wastes
Zinc (ppm)	2024	5	NA	0.00105	0.001–0.0011	0.00135	0.001–0.0017	No	Runoff/leaching from natural deposits; Industrial wastes

UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Lake Massabesic Water Treatment Plant AMOUNT DETECTED	Lake Massabesic Water Treatment Plant RANGE LOW-HIGH	Merrimack River Water Treatment Plant AMOUNT DETECTED	Merrimack River Water Treatment Plant RANGE LOW-HIGH	TYPICAL SOURCE
Perfluorobutanoic Acid [PFBA] (ppt)	2024	2.755	1.11–4.16	1.446	1.02–1.76	NA
Perfluorooctanoic Acid [PFOA] (ppt)	2024	5.996	5.59–6.51	1.688	1.42–1.94	NA

[1] The value reported under Amount Detected for TOC is the lowest ratio of percentage of TOC actually removed to the percentage of TOC required to be removed. A value of greater than 1 indicates that the water system is in compliance with TOC removal requirements. A value of less than 1 indicates a violation of the TOC removal requirements.

[2] Turbidity is a measure of the cloudiness of the water. It is monitored by surface water systems because it is a good indicator of water quality and thus helps measure the effectiveness of the treatment process. High turbidity can hinder the effectiveness of disinfectants.

Table Talk

Get the most out of the Testing Results data table with these simple suggestions. In less than a minute, you will know all there is to know about your water.

For each substance listed, compare the value in the Amount Detected column against the value in the MCL (or AL or SMCL) column. If the Amount Detected value is smaller, your water meets the health and safety standards set for the substance.

Other Table Information Worth Noting

Verify that there were no violations of the state or federal standards in the Violation column. If there was a violation, you will see a detailed description of the event in this report.

If there is an ND or a less-than symbol (<)

The Range column displays the lowest and highest sample readings. NA means only a single sample was taken to test for the substance (assuming there is a reported value in the Amount Detected column).

If there is sufficient evidence to indicate from where the substance originates, it will be listed under Typical Source.

BY THE NUMBERS

5.1 TRILLION
The dollar value needed to keep water, wastewater, and stormwater systems in good repair.

12 THOUSAND
The average amount in gallons of water used to produce one megawatt-hour of electricity.

47.5 TRILLION
The amount in gallons of water used to meet U.S. electric power needs in 2020.

1.7 TRILLION
The gallons of drinking water lost each year to faulty, aging, or leaky pipes.

33%
The percentage of water sector employees who will be eligible to retire by 2033.

2
How often in minutes a water main breaks.