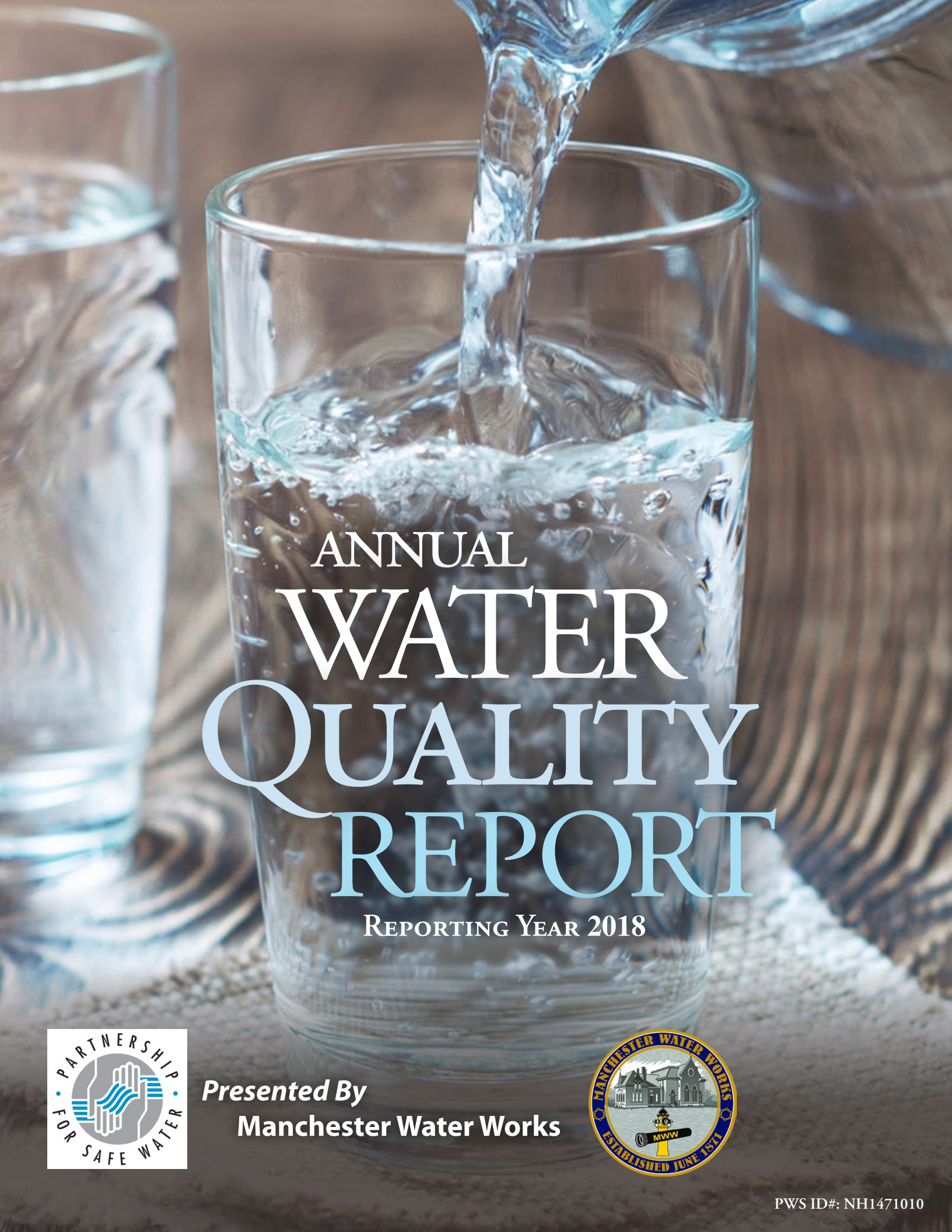


ANNUAL WATER QUALITY REPORT

Reporting Year 2018

PARTNERSHIP FOR SAFE WATER

Presented By
Manchester Water Works

MANCHESTER WATER WORKS
MWW
ESTABLISHED JUNE 1871

PWS ID#: NH1471010

Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2018. Over the years, we have dedicated ourselves to producing drinking water that meets or exceeds all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education, while continuing to serve the needs of all our water users.

Please remember that we are always available should you ever have any questions or concerns about your water.

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 on our website at www.manchesternh.gov/wtr. Please call our office at (603) 792-2803 to confirm your intent to attend.

Important Health Information

Your public water supply is fluoridated. According to the Centers for Disease Control and Prevention, if your child under the age of 6 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.

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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or http://water.epa.gov/drink/hotline.

Manchester Water Works Maintains National Recognition for "Excellence in Water Treatment"

Manchester Water Works received this recognition in 2012 from the Partnership for Safe Water, a national volunteer initiative developed by the United States Environmental Protection Agency (USEPA) and other water organizations representing water suppliers striving to provide their communities with drinking water quality that surpasses the required federal standards. The Excellence in Water Treatment award is presented to water systems that have successfully achieved and maintained optimized treatment as described in a detailed report submitted to the Program Effectiveness Assessment Committee (PEAC). The report must present data and narratives demonstrating consistent attainment and maintenance of rigorous optimization goals. In 2012, Manchester Water Works became only the eleventh utility in the nation to achieve such recognition and has consistently maintained this elite status through 2018.

The Partnership is a voluntary effort between six drinking water organizations and more than 300 water utilities nationwide. The goal of the Partnership is to provide a new measure of public health protection to millions by encouraging utilities to voluntarily improve performance beyond current regulatory requirements. The preventative measures are based around optimizing treatment plant performance and distribution system operation. The result is the production and delivery of superior-quality water to all utility customers.

Regulatory requirements for surface water filtration plants and drinking water distribution systems are becoming increasingly stringent. Accordingly, the Partnership program provides operators, field staff, managers, and administrators with tools to assess the performance of treatment plants and distribution systems and develop plans to improve performance beyond even proposed regulatory levels. Manchester Water Works' ongoing participation in the program included a rigorous review of treatment practices developed by national experts, and participation in a four-phase data collection, reporting, self-assessment, and peer review process. Manchester began its commitment to the Partnership for Safe Water program in 1996, shortly after the program's inception.

The Partnership for Safe Water is sponsored by the American Water Works Association, Association of Metropolitan Water Agencies, Association of State Drinking Water Administrators, United States Environmental Protection Agency, National Association of Water Companies, and the American Water Works Association Research Foundation.

From the Director

As Manchester Water Works (MWW) approaches 150 years, for the past several years and into the immediate future MWW has embarked on an aggressive rehabilitation and expansive capital infrastructure plan that will ensure that the City of Manchester and our extended franchise customers will be provided clean, safe, and affordable drinking water for generations to come. The following are projects that have recently been completed, are in process, or planned for future development:

- In 2016, MWW completed construction of two (2) 6.5 MG prestressed concrete storage tanks, replacing a 140 year-old 20 MG reservoir on Mammoth Road between Island Pond Road and Cohas Avenue.
- In 2018, we completed construction of a 3 MG prestressed concrete storage tank for additional storage to our south Manchester/Londonderry pressure system.
- We are currently replacing and upgrading pumps and the electrical system at our Cohas Avenue Pump Station that delivers water to both our south Manchester/Londonderry system and the Town of Derry. Beginning in 2021, we will begin supplying much-needed water to several other communities in southern New Hampshire, including Salem, Windham, Atkinson, Hampstead, and Plaistow.
- In 2019, we are planning for the rehabilitation and replacement of pumps at our Derryfield Pump Station that services our third pressure system in the East Manchester/Hooksett area.
- In 2019, we are planning for the rehabilitation of our main dam at the outlet of Lake Massabesic. The oldest structure owned by MWW, the work involves rehabilitation of the dam and surrounding impoundment area, bringing both into compliance with current State of New Hampshire regulations.
- We are currently in the preliminary design phase of a 7.5 MGD water treatment plant on the west side of the Merrimack River off of Kimball Drive in Hooksett with estimated completion in 2022. This secondary source of water culminates over 35 years of planning to supplement Lake Massabesic in supplying water to our customers.

Other projects projected within the next 5-10 years are two additional storage tanks, one replacing our 120 year-old 4 MG reservoir on Derryfield Hill and a second tank in West Manchester/Goffstown to provide additional storage and fire protection for that area of our franchise. After nearly 70 years at our current location on Lincoln Street, we are also in the early planning stages of relocating our distribution operations and administrative offices to a site adjacent to our Lake Shore Road water treatment facility. The relocation would efficiently centralize all of MWW's operations and provide the much needed space for current operating needs and future expansions.

With all of the above projects under construction or in various planning phases, MWW continues to upgrade our distribution system through an annual capital maintenance program of main replacement or cleaning and cement mortar lining of approximately 4-5 miles of main, along with capital repair or replacement of aging valves and hydrants.

With sound financial planning, we are confident that Manchester Water Works will ensure for decades to come an adequate supply for fire protection and reliable and clean potable water for all of our valued residents at a most affordable rate.

Sincerely,

Philip W. Croasdale, CPA

Director - Manchester Water Works

Where Does My Water Come From?

Since 1874, Lake Massabesic has served as the water supply for Manchester and portions of six surrounding communities. 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, and was significantly upgraded in 2003-2006. Located adjacent to Lake Massabesic, the plant treats all of the city's water before it is pumped into a 500-mile piping network for distribution to homes and industries.

In the near future (approximately 2022), water from the Merrimack River will provide a much needed additional supply for our customers. A new treatment facility located in Hooksett, NH, will be constructed to produce water meeting or exceeding the high level of quality leaving our Lake Massabesic plant.

Water Treatment 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, is maintained for redundancy. A combination of four variable-speed pumps deliver 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

In the rapid mix chamber, the primary treatment chemical, aluminum sulfate, 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, causing them 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, with the second-stage mixers 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, forming sludge, a treatment process by-product. Sludge is periodically removed by isolating one of the four 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 each of 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 prior to exiting the contact chambers and continuing 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 atmosphere.

Granular-Activated Carbon Filtration

Following intermediate ozone, the water passes through one of eight deep-bed granular-activated carbon (GAC) filters. Each filter contains six feet of biologically active media that completes the physical 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. Monochloramine is a residual disinfectant that prevents bacterial growth as water travels throughout the distribution system. Soda ash is added once again to raise the pH to help control pipe corrosion and to 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 the finished water into the distribution system.

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 by email at dmiller@manchesternh.gov.

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 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 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 storm-water 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 storm-water runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban storm-water 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.

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; and
- 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.

Source Water Assessment

In compliance with a federal mandate, the NH Department of Environmental Services performed a Source Water Assessment on Lake Massabesic in September of 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 MTBE, now prohibited, which came from reformulated gasoline. Concern was also raised over Potential Contamination Sources (PCSs) 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 NH DES Drinking Water Source Water Assessment page at http://des.nh.gov/organization/divisions/water/dwgb/dwspp/dwsap.htm.

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

Hand washing, 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- and black-colored 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. Also, flush regularly 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 shower heads may be caused by hard water or 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!)

Protecting Your Water

Bacteria are a natural and important part of our world. There are around 40 trillion bacteria living in each of us; without them, we would not be able to live healthy lives. Coliform bacteria are common in the environment and are generally not harmful themselves. The presence of this bacterial form in drinking water is a concern, however, because it indicates that the water may be contaminated with other organisms that can cause disease.

In 2016, the U.S. EPA passed a new regulation called the Revised Total Coliform Rule, which requires additional steps that water systems must take in order to ensure the integrity of the drinking water distribution system by monitoring for the presence of bacteria like total coliform and *E. coli*. The rule requires more stringent standards than the previous regulation, and it requires water systems that may be vulnerable to contamination to have in place procedures that will minimize the incidence of contamination. Water systems that exceed a specified frequency of total coliform occurrences are required to conduct an assessment of their system and correct any problems quickly. The U.S. EPA anticipates greater public health protection under the new regulation due to its more preventive approach to identifying and fixing problems that may affect public health.

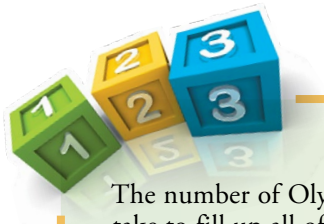
Though we have been fortunate to have the highest-quality drinking water, our goal is to eliminate all potential pathways of contamination into our distribution system, and this new rule helps us to accomplish that goal.

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 are 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 now 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.

Lead in Home Plumbing

If present, elevated levels of 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. We are responsible for providing high-quality drinking water, but we cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at (800) 426-4791 or at www.epa.gov/safewater/lead.



BY THE NUMBERS

The number of Olympic-sized swimming pools it would take to fill up all of Earth's water. **800 TRILLION**

1 CENT The average cost for about 5 gallons of water supplied to a home in the U.S.

The amount of Earth's water that is salty or otherwise undrinkable, or locked away and unavailable in ice caps and glaciers. **99%**

50 GALLONS The average daily number of gallons of total home water use for each person in the U.S.

The amount of Earth's surface that's covered by water. **71%**

330 MILLION The amount of water on Earth in cubic miles.

The amount of Earth's water that is available for all of humanity's needs. **1%**

75% The amount of the human brain that contains water.

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 are included, along with the year in which the sample was taken.

We participated in the 4th stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR4) program by performing additional tests on our drinking water. UCMR4 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, in order to determine if U.S. EPA needs to introduce new regulatory standards to improve drinking water quality. Unregulated contaminant monitoring data are 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 Contaminants Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2018	2	2	0.0137	0.0131–0.0173	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chloramines (ppm)	2018	[4]	[4]	2.12	0.53–2.12	No	Water additive used to control microbes
Chlorine (ppm)	2018	[4]	[4]	2.28	2.02–2.5	No	Water additive used to control microbes
Fluoride (ppm)	2018	4	4	0.52	0.42–0.6	No	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2018	60	NA	3.4	2.1–5.7	No	By-product of drinking water disinfection
Total Organic Carbon (TOC)[1] (ppm)	2018	TT	NA	1.81	1.55–2.17	No	Naturally present in the environment
TTHMs [Total Trihalomethanes] (ppb)	2018	80	NA	3.23	2.2–4.5	No	By-product of drinking water disinfection
Turbidity[2] (NTU)	2018	TT	NA	0.054	0.042–0.054	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2018	TT = 95% of samples meet the limit	NA	100	NA	No	Soil runoff

Tap Water Samples Collected for Copper and Lead Analyses from Sample Sites throughout the Community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2018	1.3	1.3	0.076	0/37	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2018	15	0	<1	0/37	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Aluminum (ppb)	2018	200	NA	35	0–40	No	Erosion of natural deposits; Residual from some surface water treatment processes
Chloride (ppm)	2018	250	NA	54.5	53–56	No	Runoff/leaching from natural deposits
Color (Units)	2018	15	NA	0	0–1	No	Naturally occurring organic materials
Manganese (ppb)	2018	50	NA	0.031	0.012–0.059	No	Naturally present in the environment
pH (Units)	2018	6.5–8.5	NA	7.8	7.36–8.37	No	Naturally occurring
Sulfate (ppm)	2018	250	NA	21.75	19–26	No	Runoff/leaching from natural deposits; Industrial wastes
Zinc (ppm)	2018	5	NA	0.002	0.0011–0.004	No	Runoff/leaching from natural deposits; Industrial wastes

UNREGULATED AND OTHER SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Alkalinity (ppm)	2018	32	29–34	Drinking water treatment additive
Ammonia as Nitrogen (ppm)	2018	0.35	0.26–0.46	By-product of drinking water disinfection
Ammonia, Free (ppm)	2018	0.07	0.04–0.09	By-product of drinking water disinfection
Bromochloroacetic Acid (ppb)	2018	1.1	0.682–1.680	Used as a food additive (antioxidant)
Butylated Hydroxyl Anisole (ppb)	2018	0.0297	NA	Used as a food additive (antioxidant)
Calcium (ppm)	2018	5.7	5.15–6.68	Erosion of natural deposits
Magnesium (ppm)	2018	1.24	1.11–1.32	Erosion of natural deposits
o-Toluidine (ppb)	2018	0.00693	NA	Used in the production of dyes, rubber, pharmaceuticals, and pesticides
PFOA (ppt)	2018	3.92	NA	Industrial pollutant
Phosphate (ppm)	2018	0.48	0.45–0.52	Corrosion control additive
Quinoline (ppb)	2018	0.0198	NA	Used as a pharmaceutical (antimalarial) and flavoring agent; Produced as a chemical intermediate; Component of coal
Silica (ppm)	2018	4.06	3.57–4.92	Naturally present in the environment
Sodium (ppm)	2018	52.8	51.6–55.3	Winter deicing of roadways
Total Hardness (ppm)	2018	19.35	17.4–22.1	A measure of dissolved minerals, primarily calcium and magnesium

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

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

AL (Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as the highest LRAAs.

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

ppt (parts per trillion): One part substance per trillion parts water (or nanograms per liter).

SMCL (Secondary Maximum Contaminant Level): These standards are developed to protect aesthetic qualities of drinking water and are not health based.

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.