

Presented By
Manchester Water Works



ANNUAL
**WATER
QUALITY
REPORT**

WATER TESTING PERFORMED IN 2016

We've Come a Long Way

Once again, we are proud to present our annual water quality report covering the period between January 1 and December 31, 2016. In a matter of only a few decades, drinking water has become exponentially safer and more reliable than at any other point in human history. Our exceptional staff continues to work hard every day—at any hour—to deliver the highest quality drinking water without interruption. Although the challenges ahead are many, we feel that by relentlessly investing in customer outreach and education, new treatment technologies, system upgrades, and training, the payoff will be reliable, high-quality tap water delivered to you and your family.

In 2016, Manchester retired its oldest treated water supply reservoir on South Mammoth Road, originally constructed in the 1870s, and replaced it with two new concrete water storage tanks, each with a capacity of 6.5 million gallons. The new tanks are more secure, less costly to maintain, and are fitted with internal mixing systems to optimize water circulation and enhance water quality.



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 adults, 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 the *Cryptosporidium* parasite and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.



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 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.

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) 624-6494 to confirm your intent to attend.

Where Does My Water Come From?

For more than 140 years, 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; it was also significantly upgraded in 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.



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 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 or at www.epa.gov/lead.

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. A concern was raised over the detection of methyl tertiary-butyl ether (MTBE), now prohibited, which comes from reformulated gasoline. A 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>.

Water Conservation

You can play a role in conserving water and saving yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So, get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you can save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

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.

Fluoridation

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.

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 new 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 delivers raw water through a 48-inch pipeline to the rapid mix chambers. This pipeline is equipped with a soda ash feed point, where alkalinity is boosted 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 naturally 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 flocculated 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, as well as 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 the atmosphere.

Anthracite and Granular-Activated Carbon Filtration

Following the intermediate ozone process, the water passes either through one of four deep-bed anthracite filters, or one of four deep-bed granular-activated carbon (GAC) filters. Each filter contains six feet of biologically active media that completes the physical removal process. While both filter media have proven to be effective, they have been studied side by side to determine which would be the most beneficial and economical in the long-term. Anthracite is an excellent filter media but does not have the adsorptive capability of GAC filters; however, GAC filters require periodic reactivation or replacement to restore its adsorption characteristics. Our experience with and investigation of both media has led to the decision to replace the anthracite filter media with GAC filters. In 2016, Manchester began the process of replacing the anthracite filter media with GAC filters. By the end of 2017, all eight filters will contain GAC filters, which has demonstrated a superior ability to remove contaminants of concern.

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.

What Are PPCPs?

When cleaning out your medicine cabinet, what do you do with your expired pills? Many people flush them down the toilet or toss them into the trash. Although this seems convenient, these actions could threaten our water supply.

Recent studies are generating a growing concern over pharmaceuticals and personal care products (PPCPs) entering water supplies. PPCPs include human and veterinary drugs (prescription or over-the-counter) and consumer products, such as cosmetics, fragrances, lotions, sunscreens, and house cleaning products. From 2006 to 2010, the number of U.S. prescriptions increased 12 percent to a record 3.7 billion, while nonprescription drug purchases held steady at around 3.3 billion. Many of these drugs and personal care products do not biodegrade, and may persist in the environment for years.

The best and most cost-effective way to ensure safe water at the tap is to keep our source waters clean. Never flush unused medications down the toilet or sink. Instead, check to see if the pharmacy where you made your purchase accepts medications for disposal, or contact your local health department for information on proper disposal methods and drop-off locations. You can also go search the Internet (<https://goo.gl/aZPgeB>) to find more information about disposal locations in your area.

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 in and of 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 such as total coliform and *Escherichia coli* (*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 procedures in place 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.

What Causes the Pink Stain on Bathroom Fixtures?

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

The best solution to this problem is to continually clean and dry the involved 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 to 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.

S. marcescens will not survive in chlorinated drinking water.

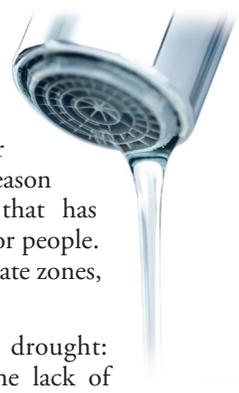
To the Last Drop

The National Oceanic and Atmospheric Administration (NOAA) defines drought as a deficiency in precipitation over an extended period of time (usually a season or more), resulting in a water shortage that has adverse impacts on vegetation, animals, and/or people. Drought conditions strike in virtually all climate zones, from very wet to very dry.

There are primarily three types of drought: Meteorological Drought, which refers to the lack of precipitation, or the degree of dryness and the duration of the dry period; Agricultural Drought, which refers to the agricultural impact of drought, focusing on precipitation shortages, soil water deficits, and reduced ground water or reservoir levels needed for irrigation; and Hydrological Drought, which pertains to drought that usually occurs following periods of extended precipitation shortfalls that can impact water supply (i.e., stream flow, reservoir and lake levels, ground water).

Drought is a temporary aberration from normal climatic conditions, thus it can vary significantly from one region to another. Although normally occurring, human factors, such as water demand, can exacerbate the impact and duration that a drought condition has on a region. By following simple water conservation measures, you can help significantly reduce the lasting effects of an extended drought.

To learn more about water conservation efforts, review the U.S. EPA's Water Conservation Tips for Residents at www.epa.gov/region1/eco/drinkwater/water_conservation_residents.html.



What's a Cross-Connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems), or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (back-pressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (back-siphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools, or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.



Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as back-flow prevention devices, are installed and maintained. We have surveyed industrial, commercial, and institutional facilities in the service area to make sure that potential cross-connections are identified and eliminated, or protected by a back-flow preventer. We also inspect and test back-flow preventers to make sure that they provide maximum protection.

For more information on back-flow prevention, contact the Safe Drinking Water Hotline at (800) 426-4791.

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 such as 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!)

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 being 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. For more information on how corrosivity impacts water quality, download this informative pamphlet: <http://goo.gl/KpTmXv>.

Test Results

Our water is monitored for many different kinds of contaminants on a very strict sampling schedule. The information below represents only those substances that were detected; our goal is to keep all detects below their respective maximum allowed levels. The State allows us to monitor 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 3rd stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if the EPA needs to introduce new regulatory standards to improve drinking water quality. Contact us for more information on this program.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2016	2	2	0.01195	0.0091–0.0142	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beta/Photon Emitters ¹ (pCi/L)	2016	50	0	1.1	NA	No	Decay of natural and man-made deposits
Chloramines (ppm)	2016	[4]	[4]	2.05	1.67–2.44	No	Water additive used to control microbes
Chlorine (ppm)	2016	[4]	[4]	1.57	1.35–1.78	No	Water additive used to control microbes
Combined Radium (pCi/L)	2016	5	0	0.3	NA	No	Erosion of natural deposits
Fluoride (ppm)	2016	4	4	0.56	0.53–0.57	No	Erosion of natural deposits; water additive, which promotes strong teeth; discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2016	60	NA	4.3	2.2–7.0	No	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes] (ppb)	2016	80	NA	3.7	1.4–6.0	No	By-product of drinking water disinfection
Total Organic Carbon (ppm)	2016	TT	NA	1.9	1.4–2.1	No	Naturally present in the environment
Turbidity ² (NTU)	2016	TT	NA	0.090	0.032–0.090	No	Soil runoff
Turbidity (lowest monthly percent of samples meeting limit)	2016	TT = 95% of samples < or = 0.3 NTU	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%TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2016	1.3	1.3	0.041	0/70	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	2016	15	0	1.0	0/70	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
Chloride (ppm)	2016	250	NA	54.25	52–56	No	Runoff/leaching from natural deposits
Color (units)	2016	15	NA	1	ND–1	No	Naturally occurring organic materials
Manganese (ppb)	2016	50	NA	13.7	5–21.8	No	Leaching from natural deposits
pH (units)	2016	6.5–8.5	NA	7.65	7.62–7.76	No	Naturally occurring
Sulfate (ppm)	2016	250	NA	15.5	13–19	No	Runoff/leaching from natural deposits; industrial wastes
Zinc (ppm)	2016	5	NA	0.001	0.0011–0.0022	No	Runoff/leaching from natural deposits; industrial wastes

UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Alkalinity (ppm)	2016	23.25	21–26	Naturally occurring and/or added for pH adjustment
Orthophosphate as P (ppm)	2016	0.4785	0.424–0.621	Treatment additive for corrosion control
PFOA (ppt)	2016	0.003	0.003–0.003	Industrial airborne contaminant
Sodium (ppm)	2016	43	39.1–45.2	Road deicing application
Total Hardness (ppm)	2016	18.6	17.9–20.1	Naturally occurring

UNREGULATED CONTAMINANT MONITORING RULE – PART 3 (UCMR3)

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH
Chlorate (ppb)	2014	180.9	32–380
Chromium (ppb)	2014	0.119	ND–0.27
Chromium-6 (ppb)	2014	0.060	0.040–0.079
Strontium (ppb)	2014	47.6	41–52
Vanadium (ppb)	2014	0.36	ND–0.56

¹The MCL for beta particles is 4 mrem/year. U.S. EPA considers 50 pCi/L to be the level of concern for beta particles.

²Turbidity 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

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 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 the addition of a disinfectant is necessary for the 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.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

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.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter, µg/L).

ppm (parts per million): One part substance per million parts water (or milligrams per liter, mg/L).

ppt (parts per trillion): One part substance per trillion parts water (or nanograms per liter, ng/L).

SMCL (Secondary Maximum Contaminant Level): SMCLs are established to regulate the aesthetics of drinking water like appearance, taste and odor.

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