



Water Quality

ANNUAL REPORT

To Our Customers,

I am pleased to provide you with this *Water Quality Annual Report* with the intent of ensuring all customers are provided with an opportunity to review the quality of Concord's public water system.

As the new Superintendent of Concord Public Works' Water and Sewer Division, I can assure you that the high level of service, reliability, and accountability you have come to expect from the Water and Sewer Division will not change. Our dedicated operators and support staff continue to overcome operational challenges in pumping, treating, testing, monitoring, and maintaining the many components of the public water system, ensuring this essential service is provided to all of our customers. Planning and execution of the rehabilitation, replacement and improvements of infrastructure assets; clear communications with our customers, using this report, our website, and other outreach channels as tools; and engaging in initiatives to further the Town's sustainability goals further stretch the Division's resources. All of this and more was and continues to be accomplished throughout a global pandemic!

More challenges are on the horizon. Drought conditions, like those experienced across the Commonwealth last year, can reduce water availability at the same time that demand for nonessential outdoor water use soars. More stringent regulatory limits on water withdrawals during droughts are anticipated, which make it likely that mandatory lawn watering restrictions will become more common, if not the norm. In addition, our staff continue to work tirelessly to remain abreast of ever-evolving regulations that pertain to existing and emerging contaminants.

As we enter into these uncharted waters, your ongoing support is truly invaluable.

If you have any questions, whether on material provided in this report or otherwise, please feel free to call our office at 978-318-3250.

Respectfully,

John H. Rogers, PE
Superintendent, Water/Sewer Division, Concord Public Works

2020 HIGHLIGHTS

- **Cleaned and redeveloped Jennie Dugan well to increase flow and improve water quality**
- **Replaced over 7,000 feet of water main and associated service laterals, hydrants, and valves in the Peter Spring/Prescott Rd neighborhood**
- **Provided 22 rebates for high efficiency toilets and clothes washers**
- **Conducted system-wide lead and copper sampling activities in accordance with a MassDEP approved sampling plan**
- **Completed a leak detection survey on 75 miles of water main in the southern portion of town, during which 1 leak was identified and repaired, saving ~1 MG/year**
- **Replaced 8 lead service lines as part of the Lead Service Line Replacement Program**
- **Selected a team of consultants to aid in the development of an Integrated Water Resources Plan (IWRP) for Concord Public Works**

Water Quality Summary (JAN.–DEC. 2020)

To ensure that tap water is safe to drink, the EPA enforces regulations that require stringent monitoring of specific contaminants within public water supply systems. Within Concord's system, over 500 tests are run each year to assess approximately 145 potential contaminants like bacteria, perchlorate, pesticides, metals, etc. Only substances detected in Concord's drinking water in 2020 are listed in the summary table below. The presence of these substances does not indicate that the water poses a health risk. These substances are divided into 4 categories: Microbiological, Primary, Secondary, and Lead & Copper Parameters. The Primary parameters list includes contaminants and associated limits of these contaminants that can adversely affect public health and are known or are anticipated to occur in public water systems. Secondary parameters are set for aesthetic purposes and are designed to assist the EPA in determining their occurrence in drinking water and whether future regulation is warranted. We are proud to report that Concord's water quality testing program not only consistently meets EPA's requirements for drinking water, but goes above and beyond those requirements to satisfy the higher standards we have set for ourselves. Additional water quality information is available on our website at www.concordma.gov/water.

MICROBIOLOGICAL PARAMETERS							
Substance	Units	Highest Level Detected	Range of Levels Found	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Violation	Major Sources in Drinking Water
Giardia lamblia	oocyst/10L	4	ND–4	TT	0	No	Discharged especially where water is contaminated with sewage or animal wastes
Heterotrophic Plate Count (HPC)	CFU/mL	10	ND–10	TT	No Standard	No	Heterotrophic plate count is an indicator method that measures a range of naturally-occurring bacteria in the environment
PRIMARY PARAMETERS							
Substance	Units	Highest Level Detected	Range of Levels Found	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Violation	Major Sources in Drinking Water
Barium	ppb	43	ND–43	2000	2000	No	Erosion of natural deposits
Bromate ²	ppb	10.8	8.0–13.0	10	0	Yes	By-product of drinking water disinfection
Chlorine ²	ppm	0.44	0.01–2.2	4 (MRDL)	4 (MRDLG)	No	Water treatment for disinfection
Fluoride ¹	ppm	1.0	0.1–1.0	4	4	No	Erosion of natural deposits; Water additive which promotes strong teeth
Haloacetic Acids ²	ppb	23	ND–57.7	60	No Standard	No	By-product of drinking water disinfection
Nitrate	ppm	2.44	0.16–2.44	10	10	No	Runoff from fertilizer use; Leaching from septic tanks; Erosion of natural deposits
Perchlorate	ppb	0.18	ND–0.18	2	No Standard	No	By-product of drinking water disinfection; Found in propellants/fireworks/munitions/blasting agents/etc.
Trihalomethanes ²	ppb	38	4.97–64.9	80	No Standard	No	By-product of drinking water disinfection
Turbidity ³	NTU	0.56	0.31–0.56	5	1	No	Suspended and colloidal particles including clay, silt, inorganic matter, algae, and microorganisms.
SECONDARY PARAMETERS							
Substance	Units	Highest Level Detected	Range of Levels Found	SMCL			Major Sources in Drinking Water
Calcium	ppm	34.8	7.09–34.8	No Standard			Erosion of natural deposits
Chloride	ppm	224	46.7–224	250			Naturally present in the environment
Copper	ppm	0.059	0.002–0.059	1.3			Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Hardness	ppm	127	24.7–127	No Standard			Erosion of natural deposits
Iron	ppb	144	ND–144	300			Erosion of natural deposits
Magnesium	ppm	9.67	1.69–9.67	No Standard			Erosion of natural deposits
Manganese ⁴	ppb	54.8	ND–54.8	50			Erosion of natural deposits
Methyl Tertiary-Butyl Ether or MTBE	ppb	4	ND–4.0	No Standard			Fuel additive; leaks and spills from gasoline storage tanks
Nickel	ppm	0.005	ND–0.005	No Standard			Erosion of natural deposits
Potassium	ppm	48.6	6.0–48.6	No Standard			Naturally present in the environment
Sodium	ppm	110	20–110	No Standard			By-product of drinking water treatment; Naturally present in the environment
Sulfate	ppm	36.1	ND–36.1	250			Naturally present in the environment
Total Dissolved Solids ⁵	ppm	520	141–520	500			Naturally present in the environment
Trichlorofluoromethane (Freon 11)	ppb	4	ND–4.0	No Standard			Discharge from use as a refrigerant
Zinc	ppm	0.092	0.0350–0.0922	5			Naturally present in the environment
LEAD & COPPER PARAMETERS ⁶							
Substance	Units	90th Percentile Level Detected	90th Percentile Action Level (AL) (EPA's MCL)	# samples (# exceeding AL)	Ideal Goal (EPA's MCLG)	Exceeds Action Level	Major Sources in Drinking Water
Lead (2017)	ppb	6	15	30 (0)	0	No	Corrosion of household plumbing systems; Erosion of natural deposits; see statement below
Copper (2017)	ppm	0.28	1.3	30 (0)	1.3	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservative; see statement below

Please see page 3 for an explanation of terms and abbreviations, as well as some additional info. in the footnotes.



Bromate in Drinking Water Notice

Nagog Pond is currently used seasonally to meet increased water demand during the warmer months. When in operation, this water is treated with ozone to address taste and odor and to enhance disinfection. Ozone can react with bromide, a naturally occurring trace element in surface water, to create bromate, a disinfection byproduct. The allowable concentration of bromate in drinking water, averaged over a year, is 10 ppb. Some people who drink water containing bromate in excess of 10 ppb over many years have an increased risk of getting cancer. The average concentration of bromate in water supplied by Nagog Pond from June–August 2020 was just over 10 ppb. The Nagog Pond water supply was shut down for the season in late August 2020 and public notice was distributed to all customers in October 2020.

As Nagog Pond is only one of Concord's seven water supplies and is currently operated seasonally, the average 12-month concentration of bromate in Concord's drinking water is closer to 4 ppm, well within the allowable limit. Prior to seasonal start-up of the Nagog Pond supply, Concord Water staff will continue to work with our consulting engineers and MassDEP to evaluate existing treatment practices in an effort to reduce bromate. For additional information on bromate, please visit www.concordma.gov/bromate.

Lead Service Line Replacement Program

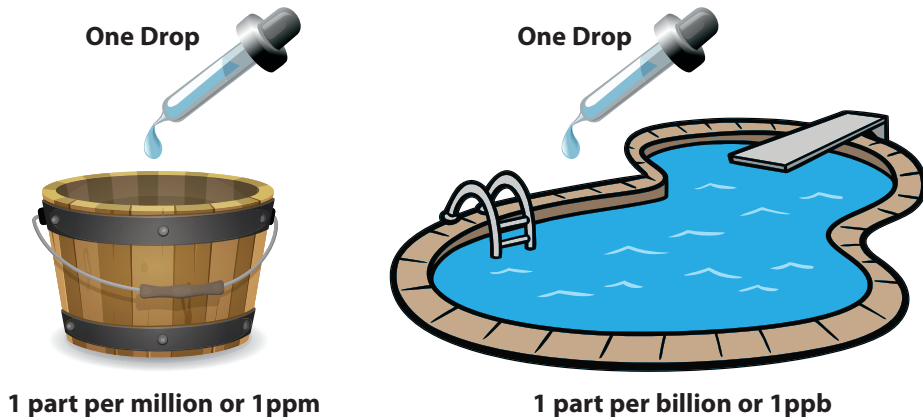
CPW's Water Division has made a concerted effort to develop a program to identify and eliminate existing lead service lines within Concord's distribution system. Based on a preliminary assessment of available service records, less than 5% of the active water services in Concord are believed to contain lead. According to the American Water Works Association (AWWA), the typical cost associated with a private contractor replacing a lead service line is in the range of \$5,000 to \$6,000.

In order to help incentivize lead service line replacements by significantly reducing the cost of this work, the Public Works Commission approved a Lead Service Line Replacement Program (LSLRP) in May 2017. This program enables Division personnel to perform work on private property, a practice not generally offered, and caps the cost of labor and materials at \$1,500. Participating customers are also offered an interest-free 12-month payment plan. As part of the LSLRP, a total of 36 lead service lines have been replaced since the program's inception!

While CPW provides outreach to those we believe may have lead service lines bringing water to their homes, we encourage customers who believe they may have a lead service line that are interested in taking advantage of this program to contact us for additional information. You can call our office at 978-318-3250 or find details on the LSLRP online at www.concordma.gov/lead.

What is the difference between ppm and ppb?

It can be hard to wrap our minds around what the concentration of a contaminant actually means. To help visualize different concentrations, imagine that one part per million (1 ppm) is the same as one drop of water in a bucket. At an even smaller concentration, one part per billion (1 ppb) is the same as one drop of water in an Olympic size swimming pool!



TERMS & ABBREVIATIONS

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

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG's 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. MCLG's 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 expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

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

CFU: colony forming units

ND: none detected

NTU: Nephelometric Turbidity Units

ppb: parts per billion or micrograms per liter (µg/L)

ppm: parts per million or milligrams per liter (mg/L)

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

90th Percentile: Out of every 10 homes, 9 were at or below this level.

FOOTNOTES

1 Fluoride: 1969 Town meeting vote authorized the Concord Board of Health to order the upward adjustment of the fluoride content of the water supply available for domestic use in the Town of Concord. Drinking water fluoridation using sodium fluoride began in 1970. As of December 2015, fluoride treatment was decreased from 1.0 ppm to 0.7 ppm in accordance with the United States Department of Health and Human Services' (HHS) recommendation. Fluoride has a secondary maximum contaminant level (SMCL) of 2 ppm to better protect human health.

2 Haloacetic Acids, Trihalomethanes, Bromate and Free Chlorine: The highest level detected represents the highest running annual average (RAA) for these contaminants. The range of levels found may have results in excess of the MCL, but the RAA of all sample locations is used to determine compliance.

3 Turbidity is a measure of the cloudiness of the water. We monitor it because it is a general indicator of water quality and treatment needs.

4 Manganese is a naturally occurring mineral found in rocks, soil, groundwater, and surface water. EPA and MassDEP have set an aesthetics-based SMCL for manganese of 50 ppb, as water may be discolored and have a taste to it at or above this level. Please be advised that there are no health effects associated with an exceedance of this SMCL, nor are there any violations.

5 Total Dissolved Solids (TDS) represents the total concentration of dissolved substances in water, and is mainly comprised of naturally occurring minerals. EPA and MassDEP have set an aesthetics-based SMCL for TDS of 500 ppm, as water may be discolored, have a taste to it, or leave deposits at or above this level. Please be advised that there are no health effects associated with an exceedance of this SMCL, nor are there any violations.

6 Lead and Copper: In accordance with EPA regulations, Concord Public Works tests the tap water of 30 homes in Concord for lead and copper every 3 years. Testing was last done during summer 2020 and is next scheduled for completion during summer of 2023. EPA determines whether the protection against corrosion is sufficient by requiring that at least 90% of the sampled homes have lead levels under 15 parts per billion (ppb).

Water Resource Updates

2020 Residential Water Use Patterns

It almost goes without saying that 2020 was definitely not the year we all expected.

Social distancing impacted the way we worked, learned, and gathered with friends and family, among other things. Rather than spending a third or more of our waking hours at school or the office, telecommuting became the norm. Then, travel restrictions limited, postponed, and canceled countless trips, further increasing the amount of time spent at home. Not surprisingly, these lifestyle changes impacted the way water was used in Concord last year.

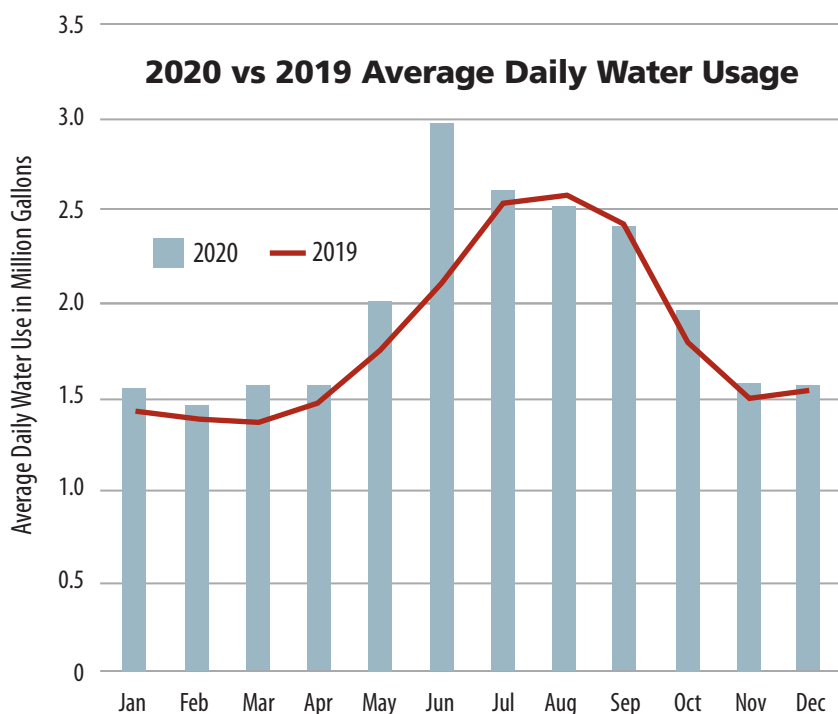
Residential water use, which accounts for roughly 60% of all water use in Town, increased by nearly 125% in 2020 as compared to 2019. The most significant increase was seen during the month of June, when the average daily water demand soared by more than 140%, rising from 2.1 million gallons per day (MGD) in 2019 to 2.97 MGD in 2020. Peak demand occurred on June 22, when CPW's Water Division provided customers with 3.85 million gallons of water for the day. As demand continued to approach the limit of available supply, the Public Works Commission instituted a mandatory Lawn Watering Restriction on June 24, limiting lawn watering to 1-day per week. Just days later, a significant drought was declared across the entire state.

Increased water demand, especially in the summer months, stresses our region's water supply system and can



istockphoto/Maryna Andrichenko

require all six groundwater supplies and Nagog Pond to operate at maximum levels. When this occurs, there is more wear and tear on our pumps, water quality is subjected to greater variability, and there is an increase in both production costs and environmental impact. You can help mitigate these impacts by installing water-saving fixtures and appliances, finding and fixing leaks, and reducing nonessential outdoor water use, especially during drought conditions. For more water saving tips, visit www.concordma.gov/conservation.



Conservation Consultations

CPW's Water Division is excited to once again offer complimentary *Conservation Consultations* to those customers that are interested in learning more about their water use patterns, ways to reduce their water waste, and how to save money on their water bills! These 30+ minute consultations will address potential indoor and outdoor water savings at your home and will provide information on how to read your water meter to manage water use and check for leaks. Information about any available water saving rebates will be provided, and water-saving devices such as low-flow showerheads and bathroom and kitchen aerators will be available free of charge. Conservation Consultations will be scheduled on a first-come, first-served basis. Appointments will be available most Friday mornings from April to September. To schedule your complimentary Conservation Consultation now, please email watersmart@concordma.gov.

Working Together to Protect Our Precious Resources

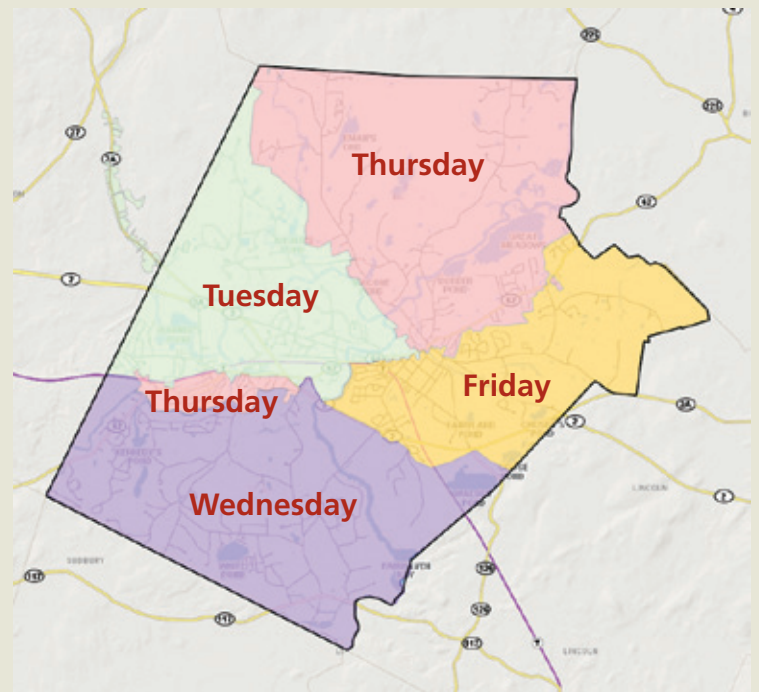
Curb the summer surge

The summer months bring longer days, warmer weather, and more time to enjoy the great outdoors. They also bring a surge in water usage! Residents increase lawn watering in an attempt to combat the bronzing affect rising temperatures and unreliable precipitation patterns have on their lawns. You can do your part to help reduce the summer surge by considering the following:

- **Timing is everything**—the best time of day to water your lawn is early morning (4am–6am) to maximize moisture uptake and avoid evaporation losses
- **Limit watering to once a week**—infrequent, deep watering encourages deep roots that are better able to withstand drought and disease
- **1" is all you need**—including rainfall, most lawns only need about an inch of water a week
- **Remember to mulch**—retain soil moisture and crowd out weeds by spreading mulch around your plantings
- **Use compost**—add nutrients to your soil while enhancing its texture and ability to retain moisture. Compost is available to Concord residents, free of charge, at the composting site on Walden Street!
- **Go native**—plant native and/or drought-tolerant grasses, trees, and shrubs that need less water and can require less maintenance
- **Check for leaks**—leaky outdoor faucets, hoses, and sprinkler heads can waste significant volumes of water, resulting in unexpected high water bills
- **Abide by local water use restrictions**—voluntary or mandatory restrictions are enacted to protect public health and safety and ensure sufficient supply is available for drinking and fire protection

FIND YOUR WATERING DAY

Your watering day is based on the municipal trash pickup schedule. To find out on which day of the week you can water during a restriction, visit www.concordma.gov/wateringday.



IRRIGATION BYLAW

All irrigation systems permanently connected to the public water supply in the Town of Concord are required to be registered with the Water & Sewer Division. This registration enables CPW to provide irrigation customers with direct outreach and updates to help effectively manage water consumption. Additionally, please be advised that newly installed systems shall be assessed a one-time connection fee associated with their increased water demand. Visit www.concordma.gov/irrigation for more information.

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Emergency Notification
System Registration



Cross Connection Control and You

Concord Public Works' Water Rules and Regulations, as well as Massachusetts' drinking water regulations, require that public water systems be protected from potential contamination resulting from cross connections.

What is a cross connection?

A cross connection occurs whenever a potable drinking water line is directly or indirectly linked to a piece of equipment or piping containing non-potable (polluted) water.

Why should I be concerned?

An unprotected or inadequately protected cross connection in your home or workplace could contaminate the drinking water not only in your building, but also in neighboring homes and businesses. Severe illnesses have been caused by cross connection contamination that could have been prevented.

How does this happen?

Typically, this occurs when equipment, plumbing fixtures or attachments such as garden hoses contain chemicals or water that becomes contaminated over time. When something unexpected happens that alters water pressure in the line or the direction of water flow (like a water main break), contaminants can be sucked from the equipment and back into the drinking water line.

Can it happen at my home?

Outdoor hose bibbs and garden hoses tend to be the most common sources of cross connections at home. The garden hose creates a hazard when submerged in non-potable water such as a swimming pool or when attached to a chemical sprayer for weed killing. Fertilizer, garden chemicals or other materials may contaminate hoses left lying on the ground. Other household cross connections can occur when irrigation systems, boilers, water filtration devices, and fire service systems are connected to the home's plumbing.

How can I be protected?

All industrial, commercial and institutional facilities are annually surveyed to ensure that all potential cross connections are identified and eliminated or protected by a backflow preventer. We also inspect and test these backflow preventers to make sure they are providing maximum protection. At home, do not attach any chemical or non-potable liquid applicators to anything connected to your plumbing system. Outdoors, install hose bibb vacuum breakers on any outside faucet. Owners of irrigation systems are required to have an approved reduced pressure zone assembly (RPZ) installed on the system.

What is a backflow preventer?

A backflow preventer is a mechanical device installed in the plumbing line to prevent the introduction of pollutants or contaminants into the drinking water supply. Types include reduced pressure zone assembly (RPZ), double check valve assembly (DCVA), pressure vacuum breaker assembly (PVB), and "air gap". The simplest type is the "air gap" or simply keeping the end of the water line or hose from coming into direct contact with the vessel being filled with water.

Where can I get more information?

If you need more information, you can contact the Plumbing Inspector's office or CPW's Water & Sewer Division.

Potential Sources of Contaminants

The sources of drinking water (both tap 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 and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or human activity.

Contaminants 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, and wildlife.
- **Inorganic contaminants**, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, and farming.
- **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- **Chemical contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- **Radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA and MassDEP prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. FDA and the Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of certain substances which the EPA calls "contaminants." The presence of these substances does not necessarily indicate that the water poses a health risk. For example, naturally occurring dissolved minerals are commonly found in well water. More information about the substances found in drinking water and their potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 1-800-426-4791 or the Massachusetts Drinking Water Program at 1-617-292-5770.

Get Involved

The Public Works Commission oversees the work of Concord Public Works. Their meetings provide an opportunity to become more involved in issues relating to the water system.

They typically meet the second Wednesday of each month at

4:00 pm via Zoom. Please check the PWC website for exact dates, times and locations. www.concordma.gov/529/Public-Works-Commission

For more information regarding water quality and resource protection initiatives, or if you have a neighborhood concern in a resource protection area (depicted on the map on page 8), please contact Alexandra Wahlstrom, Senior Environmental & Regulatory Coordinator at 978-318-3250 or awahlstrom@concordma.gov



WATER QUALITY

Lead & Copper

The detection of unacceptably high lead levels within the Flint, Michigan drinking water system began to draw national media attention in early 2015. This discovery has resulted in increased awareness and concern about drinking water quality across the country. Concord Public Works would like to reassure our customers that we take our responsibility for providing safe and reliable drinking water extremely seriously. We believe it is important to provide you with an update about Concord's ongoing lead and copper protection efforts, along with a brief explanation of what we do to prevent a similar public health crisis from occurring in Concord.

CPW's Water Division treats our drinking water to reduce the natural corrosivity of our local water supplies. We do so by upwardly adjusting the pH by adding potassium hydroxide and enhancing the buffering capacity by adding polyphosphate. These activities raise the pH from slightly acidic to neutral while simultaneously creating a very thin, protective film on the interior walls of water mains and service pipes entering your home. Most importantly, these activities significantly reduce the amount of metals, including lead (if present), that could leach from your private plumbing system into the water carried through it.

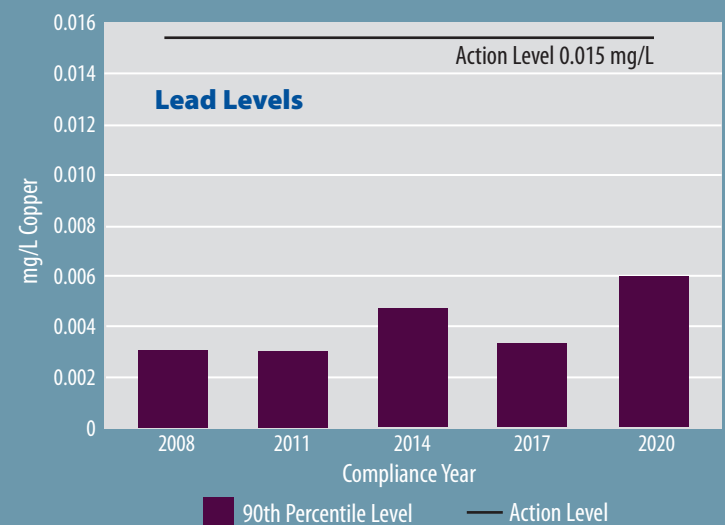
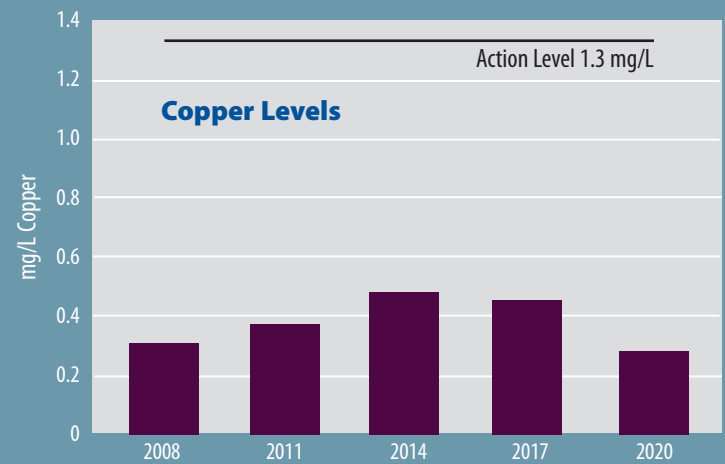
These treatment activities are validated in accordance with EPA and MassDEP regulations. A total of 30 homes throughout Concord are sampled once every three years to confirm the effectiveness of our corrosion control efforts. The last round of lead and copper sampling was completed in summer 2020 and will be repeated in summer 2023. The two graphs on this page summarize the long-term effectiveness of our treatment practices, showing Concord's compliance levels for the past five sampling events. More information is available in the Water Quality Summary on page 2.

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 fixtures, such as faucets, valves, and solder. CPW is 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, such as first thing in the morning, after work, or upon returning from vacation, 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. To conserve water, other household water usage activities such as showering, washing clothes, and flushing the toilet are also effective methods for flushing pipes and allowing fresh water from the distribution system to enter household pipes.

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 EPA's Safe Drinking Water Hotline and at <http://www.epa.gov/safewater/lead>, or you can visit CPW's website at www.concordma.gov/lead.



Most residential water service lines in Concord are made of lead, copper, or plastic. Lead service lines are generally a dull gray color and are very soft. You can identify them easily by carefully scratching the service material with a key. If the pipe is made of lead, the area you've scratched will turn a bright silver color.



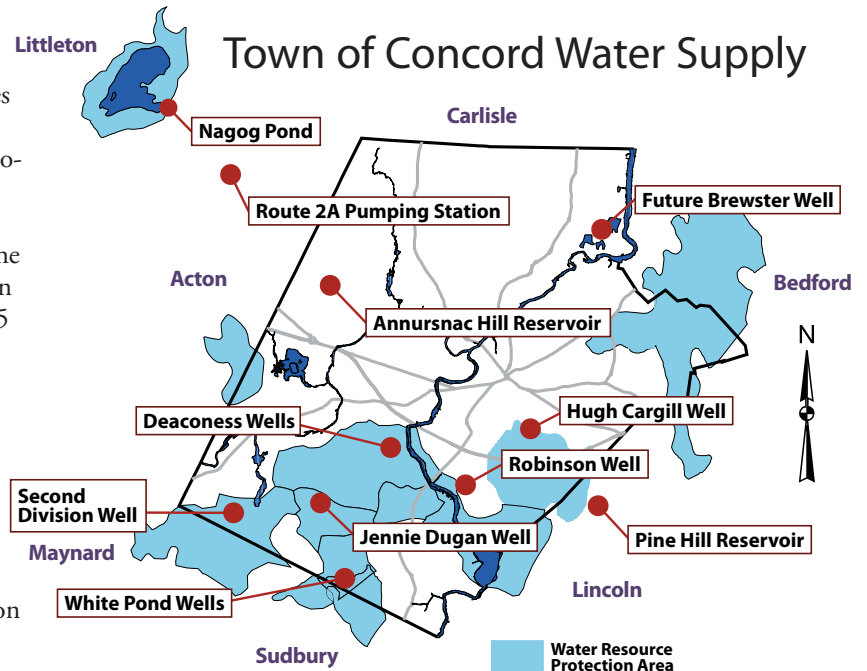
If you would like information on your service line material, please contact CPW's Water Division at 978-318-3250.

Water Supply

Concord's water system consists of six groundwater supplies located in Concord and one surface water supply located on the Acton/Littleton town line. In addition, there are associated pumping stations, two storage reservoirs with a 7.5 million gallon total capacity, approximately 134 miles of water main, and over 1,300 fire hydrants. Depending on the season, all available production facilities may be called upon to satisfy system demands which may fluctuate between 1.5 million gallons per day (MGD) during the winter months to nearly 4 MGD in the summer. Concord's public water system is interconnected with Acton and Bedford for emergency backup, if ever needed.

Water Treatment

In accordance with State and Federal drinking water requirements, Concord's water is treated before it gets to your tap. Treatment includes: *disinfection*—via the addition of liquid chlorine at all supplies plus ozone/UV light at the Nagog Pond water supply; *corrosion control*—via the addition of potassium hydroxide and polyphosphate to raise the natural pH of the water and reduce its corrosiveness to household plumbing; *fluoridation*—via the addition of sodium fluoride to help in the prevention of tooth decay; *iron sequestration*—performed by adding polyphosphate to reduce the frequency of discoloration events; and *iron and manganese removal*—performed by pressure filtering the Deaconess and White Pond wells. Due to a high level of water quality in Nagog Pond, the Town continues to operate this source under a filtration waiver. Chemical adjustments and disinfection are provided as noted in the Source Treatment Table (below) to ensure that safe drinking water is delivered to customer's taps.



Drinking Water and People with Weakened Immune Systems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the EPA's Safe Drinking Water Hotline (1-800-426-4791).

SOURCE TREATMENT

	Nagog Pond	Jennie Dugan Well	Deaconess Wells	White Pond Wells	Second Division Well	Robinson Well	Hugh Cargill Well
Source ID	01S	01G	03G, 10G	04G, 08G, 09G	05G	06G	07G
Potassium Hydroxide to Adjust pH for Corrosion Control	•	•	•	•	•	•	•
Ultra-Violet Light for Disinfection	•						
Chlorine for Disinfection	•	•	•	•	•	•	•
Ozone for Disinfection	•						
Fluoride to Promote Strong Teeth	•	•	•	•	•	•	•
Polyphosphate for Iron & Manganese Treatment	•	•	•	•	•	•	•
LayneOx™ Pressure Filtration for Iron & Manganese Removal			•	•			
Source Water Protection (SWAP) susceptibility rating*	High	Moderate	High	High	High	High	High

* Susceptibility ratings were developed as a part of the SWAP report and reflect the proximity of potential contaminant sources like farms, golf courses and residential houses to water supplies. The complete swap report is available at 135 Keyes Road or online at <http://www.mass.gov/eeal/docs/depl/water/drinking/swap/nero/3067000.pdf>.

For questions about this report or to learn more about protecting Concord's water supply, contact Alexandra Wahlstrom, Senior Environmental and Regulatory Coordinator at 978-318-3250.