Water Quality ANNUAL REPORT

To Our Customers:

I am pleased to present you with Concord Public Works' *12th Annual Water Quality Report*. This report is designed to inform you of the present "state" of water supply, as it relates directly to Concord's public water system.

In 2014, public water suppliers around the country celebrated the 40th Anniversary of the Safe Drinking Water Act (SDWA). The SDWA is the sentinel regulatory program which has helped shape meaningful advances in drinking water quality, safety, and reliability of service to all those served by Public Water Supplies. Concord is fortunate to have a well maintained and funded system that includes allowances for system replacement and improvements. Our diversified supply, committed staff, and educated customers combined with a comprehensive long-range plan positions us in a way that few other systems can match. We cannot and should not take this for granted. One thing is for certain, the water supply industry will continue to evolve and the SDWA will continue to be revisited and changed accordingly. As it does, so will we.

Once again, on behalf of all of us within the Water and Sewer Division of Concord Public Works, thank you for the opportunity to continue to serve you. I hope you find the information enclosed easy to read and informative.

As always, if you have any questions on any of the material provided, please feel free to call our office at 978-318-3250 and someone should be available to help. In keeping with the principles of sustainable Concord, I am equally pleased to be able to offer this report in electronic format, with hardcopies available upon request.

Respectfully,

Alan H. Cathcart
Superintendent, Water/Sewer Division, Concord Public Works

2014 HIGHLIGHTS

Approximately 7,000 feet of water main was replaced in the Southfield Riverdale neighborhood.

The Nagog Pond Treatment Facility hosted a full scale ozone demonstration unit for the summer allowing for increased operational reliability and the ability to not implement water use restrictions.

Cleaning of the White Pond well to increase flow and improve water quality.

Replaced a 50 HP motor and pump at the Deaconess well site.

A leak detection survey was completed on 50% of the distribution system—in the northern section of Town - resulting in the recovery of an estimated 7.9 million gallons of water a year.

Began installation of high accuracy meter reading technology and updated bill design accordingly.

Conducted system wide lead and copper sampling activities.

Water Quality Summary

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 2014 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 3 categories, 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 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*.

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
Alpha Emitters	pCi/L	5.87	ND–5.87	15	0	No	Erosion of natural deposits
Barium	ppb	35	ND–35	2000	2000	No	Erosion of natural deposits
Bromate[2]	ppb	2	ND–7.3	10	0	No	By-product of drinking water disinfection
Chlorine[2]	ppm	0.41	0.07–1.58	4 (MRDL)	4 (MRDLG)	No	Water treatment for disinfection
Fluoride[1]	ppm	1.7	0.1–1.7	4	4	No	Erosion of natural deposits; Water additive which promotes strong teeth
Haloacetic Acids[2]	ppb	9.3	0.91–74	60	No Standard	No	By-product of drinking water disinfection
Nitrate	ppm	2.1	0.057–2.1	10	10	No	Runoff from fertilizer use; Leaching from septic tanks; Erosion of natural deposits
Perchlorate	ppb	0.13	ND–0.13	2	No Standard	No	By-product of drinking water disinfection; Found in propellants/fireworks/munitions/ blasting agents/etc
Combined Radium (2013)	pCi/L	1.9	ND–1.9	5	0	No	Erosion of natural deposits
Trihalomethanes[2]	ppb	18.3	5.2–50	80	No Standard	No	By-product of drinking water disinfection
Turbidity[3]	NTU	0.85	0.29–0.85	5	1	No	Suspended and colloidal particles including clay, silt, inorganic matter, algae, and microorganisms.

SECONDARY PARAMETERS

Calcium	ppm	30	6.5–30	No Standard	No Standard	No	Erosion of natural deposits
Chloride	ppm	210	36–210	250	250	No	Naturally present in the environment
Copper	ppm	0.06	0.0025–0.06	1.3	1.3	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Hardness	ppm	110	23–110	No Standard	No Standard	No	Erosion of natural deposits
Iron	ppb	160	ND–160	300	No Standard	No	Erosion of natural deposits
Magnesium	ppm	8.8	1.6–8.8	No Standard	No Standard	No	Erosion of natural deposits
Manganese	ppb	46	ND–46	50	No Standard	No	Erosion of natural deposits
Methyl Tertiary-Butyl Ether or MTBE	ppb	2.8	1.6–2.8	No Standard	No Standard	No	Fuel additive; leaks and spills from gasoline storage tanks
Nickel	ppm	0.004	ND–0.0035	No Standard	No Standard	No	Erosion of natural deposits
Potassium	ppm	42	4.4–42	No Standard	No Standard	No	Naturally present in the environment
Sodium	ppm	96	12–96	No Standard	No Standard	No	By-product of drinking water treatment; Naturally present in the environment
Sulfate	ppm	33	ND–33	250	No Standard	No	Naturally present in the environment
Total Dissolved Solids	ppm	450	120–450	500	500	No	Naturally present in the environment
Zinc	ppm	0.024	0.0098–0.024	5	No Standard	No	Naturally present in the environment

LEAD & COPPER PARAMETERS[4]

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	ppb	4.7	15	30 (0)	0	No	Corrosion of household plumbing systems; Erosion of natural deposits; see statement below
Copper	ppm	0.45	1.3	30 (0)	1.3	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservative; see statement below

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. MCL's 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.

ppb: parts per billion or micrograms per liter

ppm: parts per million or milligrams per liter

pCi/L: picocuries per liter

ND: none detected

NTU: Nephelometric Turbidity Units

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. The current (April 2015) Massachusetts Department of Public Health's ideal goal for fluoride is 1 ppm.

2 **Haloacetic Acids, Trihalomethanes, Bromate and Free Chlorine:** The highest level detected represents the highest running annual average for these contaminants. The range of levels found may have results in excess of the MCL but the running annual average 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.

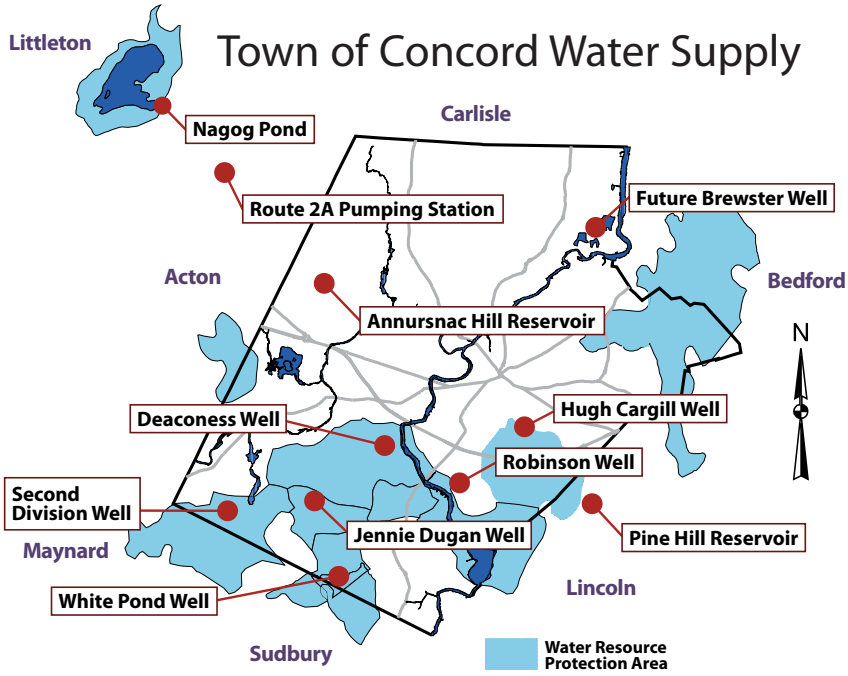
4 **Lead and Copper:** In accordance with EPA regulations, Concord Public Works tests the tap water of 30 homes in Concord for lead and copper every 3 years. Testing was last done during Summer 2014 and is next scheduled for completion during summer of 2017. EPA determines whether the protection against corrosion is sufficient by requiring that at least 90% of the sampled homes have lead levels under 15 parts per billion (ppb). This is called the Action Level.

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, it has associated pumping stations, two storage reservoirs with a 7.5 million gallon total capacity, approximately 130 miles of water main, and over 1,250 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 over 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 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, Acton, MA	Jennie Dugan Well	Deaconess Wells	White Pond Wells	Second Division Well	Robinson Well	Hugh Cargill Well
Source ID	01S	01G	03G	04G	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 and Corrosion Control	♦	♦	♦	♦	♦	♦	♦
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. Complete SWAP reports are available at 135 Keyes Road and online at *http://www.mass.gov/eea/docs/dep/water/drinking/swap/nero/3067000.pdf.*

Water Conservation

To water or not to water?

Some water for thought as we move into the summer months

Clean, safe drinking water is essential for many aspects of our lives, yet so few of us give a second thought to the water that comes out of our taps. There are a number of compelling reasons to conserve water year-round. When you conserve water, you conserve energy, reduce your carbon footprint, reduce your water bills, protect habitat for aquatic life, and ensure adequate water supplies for future generations. Conserving water during the summer season (May-September) is especially important; we need your help to balance our own needs with those of the environment, all while ensuring enough water is available for emergency needs like fire protection.

During the winter months, customers use an average of 1.6 million gallons of water per day (MGD); this water is considered essential usage, which consists of routine tasks like bathing, cooking, cleaning, and drinking. During the summer months, average usage increases to 2.4 MGD. Much of this increase is attributed to outdoor water use for watering lawns and gardens, topping off swimming pools, and washing cars. When there is a stretch of elevated temperatures combined with a lack of precipitation, water demand peaks close to 4.0 MGD as outdoor water use increases.

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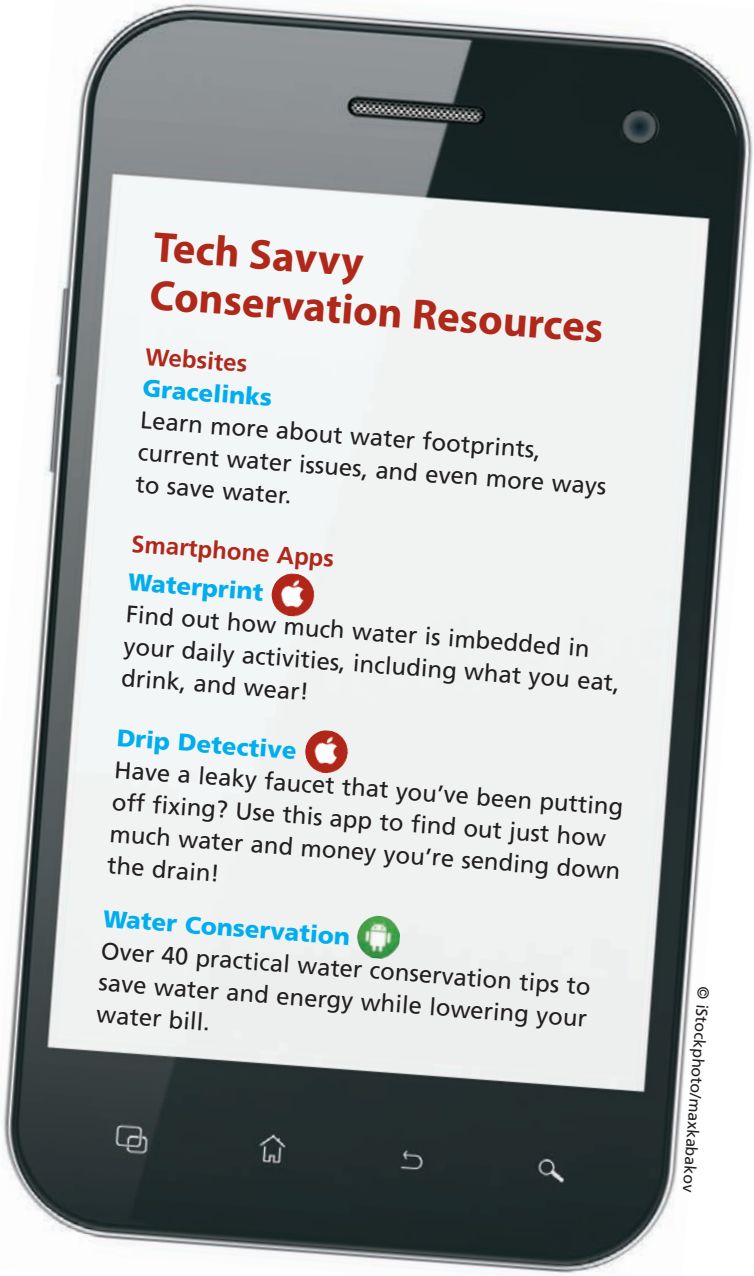
While Concord's water system may be able to sustain average summer demand for a time with one source offline, peak demand is not sustainable for long. Excessive demand could lead to a number of issues, such as diminishing water pressure for some customers, changes in water quality, or even water main breaks associated with increased stress on the water mains.

We ask that all of our customers use water responsibly and follow best management practices for outdoor water activities during the summer season. Responsible outdoor water use, like limiting lawn watering to twice per week before 9 AM, throughout the year creates a healthy and resilient lawn; this ensures that during the hot, dry summer weeks, your lawn will simply go dormant rather than die. Not only are you saving water and money, but you are also helping ensure adequate water is available for essential and emergency uses.

For more information on our current state of demand management and for tips on conserving water both indoors and outdoors, please visit *www.concordma.gov/water.*



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News and Notes

Let's Make Water Conservation a Habit

Rain Gardens

A Sustainable Solution to Storm Water Pollution and Problems

What is a Rain Garden?

Runoff from stormwater and snowmelt can be polluted by oil, sediment, and chemicals that build up on our streets, driveways, and parking lots as a result of daily activities. Rain Gardens are a Low Impact Design or LID technique which captures runoff in an engineered area with a simple design to fit within the landscape. Rain Gardens use both physical and biological processes to capture and treat stormwater which replenishes groundwater locally while slowing runoff to minimize flooding and erosion problems.

How Does a Rain Garden Work?

Polluted runoff from impervious areas such as driveways, streets, parking lots etc., flow into rain gardens and infiltrate slowly through mulch and a specialized mixture of sand, topsoil and organic matter. Pollutant removal occurs as a result of natural processes in the soil composition and the plant-soil-microbe complex that develops. Pollutants such as oils and metals, like zinc and lead, are filtered by soil media. Excess nutrients such as phosphorous and nitrogen are utilized by the plants as opposed to being collected in waterways and creating problematic algae growth. Stormwater is attenuated by staging within the cell thereby reducing the rate of runoff and replenishing aquifers naturally by infiltration into the ground.

Why Are Rain Gardens Important?

- Improves water quality in streams, ponds, lakes and rivers
- Enhances local recharge of groundwater supplies
- Slows runoff, minimizing erosion and flooding problems

- Provides habitat for native plants and beautifies landscapes
- Promotes discussion and awareness of Low Impact Design
- Consistent with the Town of Concord's Sustainability Initiative

For more information or to find out if a rain garden is right for you, please contact CPW-Engineering at 978-318-3210.

2015 Rain Barrel Program

Special offer for Concord Water Customers

- Recycled White Oak Barrels: $325.00
- Plastic Barrels: $75.00-$85.00

Available in Charcoal and Granite

Order deadline is Tuesday, April 28, 2015.

For more information, visit *www.concordma.gov/water*. To place an order for wooden barrels, call Green Roof Solutions at 866-675-9963. To place an order for plastic barrels and rain barrel accessories, visit *www.concordmarainbarrelsale.com*.

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 may 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, contaminants are then sucked from the equipment and 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 lawn 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 in-ground irrigation systems are required to have an operable backflow preventer 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 principal assembly, (RPBP) double check valve assembly (DCVA), pressure vacuum breaker assembly (PVB) and "air gap". The most simple type is the "air gap" or simply keeping the end of the water line or hose from coming in 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 the Water & Sewer Division.

Potential Sources of Contaminants

Contaminants that may be present in source water include:

- **Microbial contaminants**, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants,** such as salts and metals, 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** may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- **Organic chemical contaminants** include synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- **Radioactive contaminants** 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, the Department (MassDEP) and EPA 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 some 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 7:15 pm. Please check the PWC website for exact dates and location. *www.concordma.gov/Pages/ConcordMA_Publicworks/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 3), please contact Melissa Simoncini, Senior Environmental & Regulatory Coordinator at 978-318-3250 or *msimoncini@concordma.gov.*

Unregulated Contaminants Monitoring Rule (UCMR3)

The 1996 amendments to the Safe Drinking Water Act instruct the EPA to have public water systems monitor their drinking water for not more than 30 unregulated contaminants once every five years.Unregulated contaminants are those for which the EPA has not established drinking water standards. Monitoring unregulated contaminants helps determine the contaminant occurrence and if future regulation is warranted to protect public health. During 2014, Concord Water & Sewer participated in the third round of the Unregulated Contaminant Monitoring Rule (UCMR3) monitoring. The following table summarizes contaminants identified during this monitoring. For more information on UCMR3, please visit *http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr/ucmr3/index.cfm* or call EPA's Safe Drinking Water Hotline at 1-800-426-4791.

UNREGULATED CONTAMINANTS (UCMR3)

Substance	Units	Average Level Detected	Range of Levels Found	Health Reference Level	Use or Environmental Source
1,4-Dioxane	ppb	0.10	ND–0.12	3	Used as a solvent or solvent stabilizer in manufacture and processing of paper, cotton, textile products, automotive coolant, cosemetics, and shampoos
Chlorate	ppb	88	27–220	210	Agricultural defoliant or desiccant; disinfection byproduct; and used in production of chlorine dioxide
Chromium	ppb	5.8	ND–41.2	100 (MCL)	Naturally-occurring element; used in making steel and other alloys; chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation
Hexavalent Chromium	ppb	0.09	0.03–0.17	No Standard	Naturally-occurring element; used in making steel and other alloys; chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation
Strontium	ppb	121.2	45.6–170.2	4200	Naturally present in the environment; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions

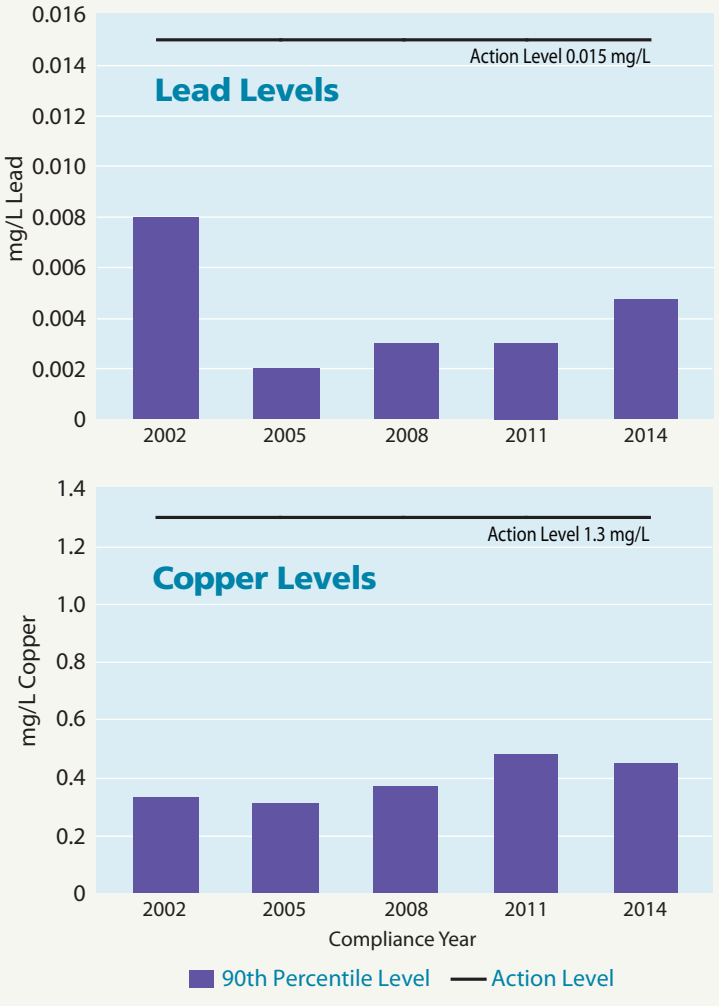
Water Quality

Lead & Copper

In accordance with U.S Environmental Protection Agency (EPA) and Massachusetts Department of Environmental Protection (MassDEP) regulations, Concord's Water Division tests for lead and copper on a three-year schedule. The last round of lead and copper sampling was completed in late summer 2014 and will be repeated in late summer 2017. A total of 30 homes throughout Concord are sampled on this schedule to confirm the effectiveness of our corrosion control efforts. The two graphs on this page summarize Concord's compliance levels for the past five compliance periods. 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. Concord Water 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, 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 EPA's Safe Drinking Water Hotline at *http://www.epa.gov/safewater/lead* or visit the Concord Public Works website at *www.concordma.gov/cpw*.



A Brief History of Nagog Pond

Beginning in 1874, water was first supplied to Concord from Sandy Pond, located in nearby Lincoln. After the drought of 1883, the Town petitioned the Commonwealth of Massachusetts for water rights to Nagog Pond as accepted at Town Meeting 1884. After years of planning and land acquisition, water flowed from Nagog Pond to Concord in September 1909.

As Concord's rights to Sandy Pond tightened, the water system slowly transitioned from a low-pressure gravity system (<40 psi) to a high-pressure system (>100psi). This enhanced both water supply and fire protection. The transition was complete in 1969 when the Town abandoned all facilities associated with Sandy Pond—in exchange for the land atop Pine Hill. This land became the site for a five-million gallon storage reservoir that was constructed and put into service in spring 1971.

For most of the 20th century, Nagog Pond was Concord's primary source of supply. In 1989, EPA promulgated the Surface Water Treatment Rule (SWTR), which requires filtration of all surface water supplies unless strict water quality criteria are met. Nagog Pond was one of only 13 water supplies in Massachusetts to qualify for filtration avoidance, provided that the Town increase watershed protection and enhance disinfection with ozone.

The Ozone Treatment Facility was installed on the shore of Nagog Pond in 1999 upstream of the existing chemical treatment at the Route 2A pumping station (constructed in 1955). As drinking water regulations continued to evolve, the Route 2A pumping station was upgraded to include ultraviolet light (UV) treatment in 2012.

Moving towards a resilient future

Nagog Pond continues to be an integral part of Concord's water supply network, however 90% of Concord's present drinking water comes from six groundwater wells located in Town (see Map on Page 2). This evolution is primarily attributed to the fact that the filtration waiver has significantly curtailed the availability of Nagog, especially year round. While our ability to operate Nagog Pond judiciously (and seasonally) has enabled Concord to be one of a handful of public water suppliers in Massachusetts to maintain its filtration waiver, increasing system demands are making this increasingly difficult to maintain.

To ensure we can continue to provide uninterrupted water service, Concord is evaluating what it will take to provide state-of-the art treatment at Nagog Pond. Deliberately designing and constructing a filtration facility, rather than waiting for a regulatory mandate, allows Concord to accommodate this facility in a fiscally responsible and strategic manner. Small-scale treatment plants were piloted in 2013 to determine the best treatment processes, with consideration to operational efficiencies and site needs. We are currently working with our design engineer to generate accurate cost estimates to be presented at Town Meeting in 2016.

As water resource regulations continue to evolve, water demands and withdrawals may be conditioned upon regional triggers, rather than town-wide needs. This will influence how and when Concord's water supplies are operated. The construction of the new Nagog Pond Filtration Facility is essential to enhancing operational resiliency, minimizing environmental impacts and ensuring Concord Water customers continue to receive the high quality water that they deserve.

1884
Water Rights for Nagog Pond Obtained

1909
Water Flowed from Nagog to Concord via Gravity

1955
Construction of Route 2A Pumping Station with Chemical Treatment

1999
Added Ozone Treatment

2012
Added Ultraviolet Light Treatment

2013
Filtration Facility Pilot Study

2015
Filtration Facility Design

2016–2017
Filtration Facility Construction

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