Town of Lincoln Water Department
Annual Water Quality Report 2020
PWS ID# 3157000

INTRODUCTION

This report describes Lincoln's drinking water sources, treated water quality, and how we maintain the quality of your water. This report is issued annually to you, the consumer, to keep you updated on your drinking water quality. The report also provides information on where your water comes from, how we treat it, and answers to questions you may have about Lincoln's water system.

Established in 1874, the Lincoln Water Department (LWD) provides drinking water and fire flow protection throughout the Town. The drinking water source of supply consists of Flint's Pond and the Tower Road Well. Water is pumped to the micro-filtration plant where the water is treated and filtered. The distribution system consists of the Bedford Road water storage tank, 58 miles of water main and 488 fire hydrants.

HOW CAN I LEARN MORE?

Maintaining water service is essential to public health and safety, and protecting the health of our water operators and customers is our highest priority. LWD leadership has been following the developments of COVID-19 and implementing continuity of operations plans to make sure the water keeps flowing through this unprecedented situation. Stay healthy and be safe.

LWD is actively following communications from the government, the World Health Organization (WHO), and the Center for Disease Control (CDC) for information and directives, and has been taking all the required precautions. The Department also, switched face-to-face meetings to remote meetings, and is encouraging its employees to maintain the strongest level of social distancing in order to protect their health and the health of the entire community during these difficult times. LWD is well prepared and continues to guarantee the same quality and service levels as before. Should you have any more questions, please visit our web page at https://www.lincolntown.org/219/Water-Department for more information. You can also email the Water Commissioners.

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The Water Department Administrative office is located at 77 Sandy Pond Road. Water Commission meetings are generally held at 8:00 A.M on the 1st Tuesday of each month via Virtual Meeting Pursuant to Governor Baker's March 12, 2020 Order Suspending Certain Provisions of the Open Meeting Law. Find the agenda for the Water Commission Meetings at http://www.lincolntown.org/AgendaCenter. Members of the public who wish to listen or watch the meeting may do so in the following manner:

Topic: Board of Water Commissioners Zoom Meeting
Join Zoom Meeting: https://zoom.us/j/93393327939?pwd=dTl6RUVweTFWcVJ4Z0ZYZ2ZTZmVMQT09
Meeting ID: 933 9332 7939
Password: 770882
Dial by your location: 646-876-9923

Office hours are by appointment only. Visit our webpage for updates at
https://www.lincolntown.org/219/Water-Department.

VISIT OUR WEBSITE TO FIND OUT MORE ON……

COVID-19 Protocols
https://www.lincolntown.org/DocumentCenter/View/59095/TOL-COVID-Control-Plan-72720

Water Department Rules and Regulations
https://www.lincolntown.org/DocumentCenter/View/27642/Rules-and-Regs-2016a?bidId=

How to update information for your account
https://www.lincolntown.org/DocumentCenter/View/44767/Request-for-Account-Update-Information

Application form to request water shut off
https://www.lincolntown.org/DocumentCenter/View/10208/Water-Shut-Off-Request-Form?bidId=

Apply for Abatement
https://www.lincolntown.org/DocumentCenter/View/44750/Abatement-Application

Request a final read
https://www.lincolntown.org/DocumentCenter/View/44749/Final-Water-Bill-Request-Form

SYSTEM IMPROVEMENTS

Governed by three elected Commissioners, the Department is funded entirely by user fees. We operate as an Enterprise Fund, meaning that revenues are expected to meet or exceed expenditures on a year-to-year basis, with the difference (Retained Earnings) held in reserve to fund emergency repairs, capital expenditures, and system improvements. Our budget and capital expenses are voted by the Town at the annual Town Meeting. We receive accounting, insurance, and personnel services from the general Town government, for which we are billed. LWD maintains liaisons with various Town entities, including Town Administration and the Finance Committee.

The Board of Water Commissioners is committed to providing safe, reliable and high-quality water service for our customers. To meet this commitment, the Board has developed a long-term financial and capital improvement program to ensure there are adequate funds available to make necessary investments in infrastructure and personnel.

The Board of Water Commissioners worked hard to achieve a budget that supports high quality operations and needed capital investments, and will yield enough retained earnings to keep the Department fiscally healthy. In the last two years, the Department undertook a large number of projects to upgrade the microfiltration water plant and chemical handling systems and to address deficiencies identified by the Massachusetts Department of Environmental Protection. All of these will be completed by December of 2021, including the new coagulation pretreatment of the pond water designed to lower the TTHM (trihalomethane) levels in the water. (The TTHM levels have slightly exceeded the allowed limits, primarily in the summer, for the last few years.)

The capital investments we have made will ensure that the Department will continue to supply adequate and safe water for at least five years. In five to seven years, the Water Treatment Plant will probably require another major overhaul. In the meantime, the Department is studying three long-range options: 1) Joining the MWRA (Massachusetts Water Resources Authority to get fully treated water from the Quabbin Reservoir; 2) Building a new treatment plant with newer technology that may reduce operating costs; or 3) continuing to upgrade our current system as needed. It would take at least five years to accomplish options 1 or 2, so it is important that we invest enough in our current plant to carry us at least five years.

A Public Hearing was held on February 25, 2020 to discuss possible water rate and/or fee increases for water services. To meet this commitment, the Commission is working with the Lincoln Finance and Capital Committees to develop long-term financial and capital improvement programs to ensure there are adequate funds available to maintain infrastructure

and provide for the delivery of safe and reliable water service. If you have questions about the rate changes, please contact Customer Service at 781-259-2669 Monday through Friday, 7:00 A.M.to 3:30 P.M.

LINCOLN'S DRINKING WATER – A WELL PROTECTED SOURCE

The Town of Lincoln is supplied by both surface water and groundwater well. Flint's Pond is the primary year-round supply. Tower Road Well is a supplemental source used during peak periods and when Flint's pond is off-line for servicing.

Since 1874, when the system was known as the Lincoln Water Works, the Town recognized the need to protect its watershed. The watershed consists of 465 acres of land surrounding Flint's Pond, which is approximately 92 percent owned and/or controlled by the Town. The Town also owns the land around the Tower Road Well within the Zone I border defined by Mass DEP regulations. The Town has in place a Watershed Protection Plan designed to limit access to the water and protect the land from any development that would endanger the water supply. One of the biggest threats to the Town's water supply is improperly maintained septic systems. You can help protect your drinking water quality by pumping out your septic system every two years. Never dump hazardous substances down septic or storm drains. Do not use septic system cleaners. For more information on how to maintain your septic system you can visit https://www.mass.gov/guides/caring-for-your-septic-system.

SOURCE WATER ASSESSMENT PROGRAM

The Source Water Assessment & Protection (SWAP) Program, established under the federal Safe Drinking Water Act, requires every state to: inventory land uses within the recharge areas of all public water supply sources; assess the susceptibility of drinking water sources to contamination from these land uses; and publicize the results to provide support for improved protection. A susceptibility ranking of moderate for Flint's Pond and ranking of high for Tower Road well were assigned using the information collected during the assessment by Mass DEP. You can download a copy of the SWAP Report from www.mass.gov/eea/docs/dep/water/drinking/swap/nero/3157000.pdf

INFORMATION ABOUT YOUR DRINKING WATER

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. However, some people may be more vulnerable to contaminants 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 provider. More information about contaminants and potential health effects, including EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants can be obtained by calling the USEPA's Safe Drinking Water Hotline 1-800-426-4791.

The sources of drinking water generally include rivers, lakes, streams, ponds, reservoirs, springs and wells. Because water is the universal solvent, it dissolves naturally-occurring minerals, and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity as it travels over the surface of the land or through the ground. Contaminants that can be present include:

- ***Microbial contaminants***, such as viruses and bacteria, which may come from septic systems 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.
- ***Pesticides and herbicides***, which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses.
- ***Radioactive contaminants***, which may be naturally occurring or be the result of oil and gas production and mining activities.
- ***Organic chemical contaminants***, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

Lead and Copper: Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor. Lead and copper samples were collected in the summer of 2020.

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. LWD 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 want 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 http://www.epa.gov/safewater/lead**.**

Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. **Sodium** sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, should be aware of the sodium levels where exposures are being carefully controlled.

Manganese is a naturally occurring mineral found in rocks, soil, groundwater, and surface water. Manganese is necessary for proper nutrition and is part of a healthy diet, but can have undesirable effects on certain sensitive populations at elevated concentrations. The United States Environmental Protection Agency (EPA) and Mass DEP have set an aesthetics-based Secondary Maximum Contaminant Level (SMCL) for manganese of 50 ug/L (microgram per liter), or 50 parts per billion. In addition, Mass DEP's Office of Research and Standards (ORS) has set a drinking water guideline for manganese (ORSG), which closely follows the EPA public health advisory for manganese. Drinking water may naturally have manganese and, when concentrations are greater than 50 ppb, the water may be discolored and taste bad. Over a lifetime, the EPA recommends that people drink water with manganese levels less than 300 ppb and over the short term, EPA recommends that people limit their consumption of water with levels over 1000 ppb, primarily due to concerns about possible neurological effects. Children younger than one year old should not be given water with manganese concentrations over 300 ppb, nor should formula for infants be made with that water for more than a total of ten days throughout the year. The ORSG differs from the EPA's health advisory because it expands the age group to which a lower manganese concentration applies from children less than six months of age to children up to one year of age to address concerns about children's susceptibility to manganese toxicity.

Water Health Advisory for manganese at: https://www.epa.gov/sites/production/files/2014-09/documents/support_cc1_magnese_dwreport_0.pdf

Mass DEP Office of Research and Standards (ORSG) for manganese
http://www.mass.gov/eea/agencies/massdep/water/drinking/lead-and-other-contaminants-in-drinking-water.html#11

FOR YOUR HEALTH

In order to ensure that tap water is safe to drink, Mass DEP and USEPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration and the Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Regulated contaminants are those substances for which the USEPA has established drinking water standards to protect human health. Unregulated contaminants are those for which USEPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist USEPA in determining their occurrence in drinking water and whether future regulation is warranted.

Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals that includes PFOA, PFOS, GenX, and many other chemicals. PFAS have been manufactured and used in a variety of industries around the globe, including in the United States since the 1940s. PFOA and PFOS have been the most extensively produced and studied of these chemicals. Both chemicals are very persistent in the environment and in the human body – meaning they don't break down and they can accumulate over time. There is evidence that exposure to PFAS can lead to adverse human health effects. PFAS can be found in:

- Food packaged in PFAS-containing materials, processed with equipment that used PFAS, or grown in PFAS-contaminated soil or water.

- Commercial household products, including stain- and water-repellent fabrics, nonstick products (e.g., Teflon), polishes, waxes, paints, cleaning products, and fire-fighting foams (a major source of groundwater contamination at airports and military bases where firefighting training occurs).

- Workplace, including production facilities or industries (e.g., chrome plating, electronics manufacturing or oil recovery) that use PFAS. • Drinking water typically localized and associated with a specific facility (e.g., manufacturer, landfill, wastewater treatment plant, firefighter training facility).

- Living organisms, including fish, animals and humans, where PFAS have the ability to build up and persist over time.

Lincoln's water is highly unlikely to be contaminated with PFAS. In 2016 the EPA required several neighboring towns to test for PFAS as part of a random sampling program. Lexington, Waltham, Wayland, Concord, and Sudbury all tested negative. Moreover, Lincoln has a well-protected watershed that supplies water to Flint's Pond and the Tower Road Well, currently our only two active water sources. Our watersheds are far from any military bases or industrial activities. The Water Department tested for the presence of PFAS in March of 2019. The results were none detected.

WATER CONSERVATION

The water levels in Flint's Pond have returned to normal levels after the drought of 2016-17. Because Lincoln historically exceeds the DEP withdrawal permit, the Department is required to enact water conservation regulations from May 1 to September 30 each year. The Department restricts outdoor watering to two days per week. The full text of the regulation can be found at https://www.lincolntown.org/DocumentCenter/View/35626/LWD-Drought-Management-Plan-2017.

The DEP issued the Town's current water withdrawal permit in 2010. There are two major permit provisions with respect to water consumption: that we achieve the state-wide goal of 65 gallons per person per day residential use, and that our total annual withdrawal, including non-residential users and unaccounted for (lost) water not exceed 182 million gallons per year. We have achieved the residential water use goal four times in the last eight years, one of which was the result of the mandatory watering ban. We are delighted to report that our 2019 gallons per person per day residential use was 63 and our overall annual water withdrawal was 172 million gallons.

Although Flint's Pond water levels remained normal last summer, the state declared a Critical Drought in the Charles River Water Basin and in response the Commissioners imposed Stage 4 limits on water use. The Commissioners urge our customers to follow the annual and drought-related water restrictions and to take advantage of the conservation rebate programs we offer to replace older toilets and appliances with new water-saving ones. You can visit our web page for more information at https://www.lincolntown.org/398/Restrictions-Conservation-Water-Use.

Product	Qualifying Criteria	Limit Per Account	Rebate
Toilet	WaterSense	1	$30
Clothes washer	Energy Star certified	1	$50
Irrigation controller	WaterSense	1	$40
Moisture sensor	WaterSense	1	$30

The Department continued its aggressive efforts to reduce leaks in the mains and service lines in an effort to reach the DEP mandate of less than 10% unaccounted for or lost water (UAW). We are happy to report that Lincoln's 2019 UAW is 11.9%, a significant decrease from the 18.8% reported for 2018. The leak detection program will continue as we attempt to reduce our water use by minimizing lost water.

WATER TREATMENT

Depending on the source location, LWD adds a low concentration of either potassium hydroxide or sodium hydroxide to the drinking water in order to increase the pH (reduce the acidity) of the water to reduce its natural corrosiveness. Chlorine is added as a disinfectant at the Flint's Pond treatment plant facility and fluoride is added at both the treatment plant and the Tower Road well to aid in dental health and hygiene. Zinc orthophosphate is also added at both sites for corrosion control and to reduce levels of iron and manganese.

Monitoring and reporting Violations

We routinely monitor our water system for the presence of drinking water contaminants. Our water system recently violated a drinking water standard. Although this incident is not an emergency, as our customers, you have a right to know what happened, what you should do, and what we are doing to correct the situation. With the testing results received in June 2020 our system exceeded the standard, or maximum contaminant level (MCL), for Total Trihalomethanes (TTHM) at one of two sampling locations. The MCL for TTHM is based on the locational running annual average (LRAA), which is determined by averaging the quarterly results for all samples collected at a particular sampling location for the previous four calendar quarters. The LRAA standard for TTHM is **80 parts per billion (ppb)**. As of the end of the 2nd quarter (April, May, June), the calculated LRAA was **81.9 ppb** at our Sam Brooks (1175 Lexington Road) sampling location.

What should I do?

- The use of an alternative (e.g., bottled) water supply is NOT necessary. If you have specific health concerns, we recommend you consult your doctor or health care provider about the drinking water.
- Information is available from the Mass DEP Drinking Water Program at 617-292-5770 and at the follow websites:
    - https://www.mass.gov/service-details/tthm-in-drinking-water-information-for-consumers
    - https://www.mass.gov/regulations/310-CMR-22-the-massachusetts-drinking-water-regulations

What does this mean?

This is not an immediate risk. If it had been, you would have been notified immediately after receiving the sampling results. This public notice is issued in accordance with 310 CMR, 22.16, as a Tier 2 Notification. A Tier 2 exceedance relates to a long-term exposure that may result from drinking the water over many years. *Some People who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.*

What is being done?

TTHM are byproducts from the reaction of disinfectants with natural organic matter in the water, primarily from the Flint's Pond water supply. Historically, TTHM levels have varied seasonally due to disinfection regulatory requirements and the increased presence of natural organic matter in the Flint's Pond source water during warmer months. Water quality sampling indicated the organic content in Flint's Pond was elevated for a longer than normal duration in the spring and summer of 2019. Additionally, during the 4th quarter of 2019, the required volume of water pumped from Flint's Pond was greater than normal due to a lack of water production at the Tower Road Well (the Town's second water source). Although the TTHM levels at the Sam Brooks sampling location decreased from the 2nd quarter of 2019 compared to the 2nd quarter of 2020, the LRAA remained above the MCL due to elevated levels in the 3rd quarter and 4th quarter of 2019. We are working with the Mass DEP and our engineering consultant to reduce the formation of TTHM while maintaining an adequate level of disinfectant. We continue to optimize operations and review treatment modifications that may remove natural organic matter to resolve this problem as quickly as possible. As of October 2020,

the calculated LRAA at all locations are below 80 ppb and thus the Department is in compliance. We anticipate the new coagulation system to be on-line summer of 2021.

CROSS CONNECTION CONTROL PROGRAM

The purposes of this program are:

- To protect the public potable water supply from the possibility of contamination or pollution by isolating such contaminants or pollutants which could backflow or back-siphon into the public water system.

- To promote the elimination or control of existing cross connections, actual or potential between its customer's potable water system, and non-potable systems.

- To provide for the maintenance of a continuing program of cross connection control which will effectively prevent the contamination or pollution of all potable water systems by cross connection. For information regarding our program please contact the Lincoln Water Department at 781-259-2669.

What you can do to help prevent a cross-connection: Without the proper protection something as simple as a garden hose has the potential to contaminate or pollute the drinking water lines in your house. In fact, over half of the country's cross-connection incidents involve unprotected garden hoses. There are very simple steps that you, as a drinking water user, can take to prevent such hazards:

- Never submerge a hose in soapy water buckets, pet watering containers, pool, tubs, sinks, drains, or chemicals.
- Never attach a hose to a garden sprayer without the proper backflow preventer.
- Buy and install a hose bibb vacuum breaker on every threaded water fixture. The installation can be as easy as attaching a garden hose to a spigot. This inexpensive device is available at most hardware stores and home-improvement centers.
- Identify and be aware of potential cross-connections to your water line.
- Buy appliances and equipment with a backflow preventer.
- Buy and install backflow prevention devices or assemblies for all high and moderate hazard connections.

WATER QUALITY DATA 2020

To safeguard the quality of our drinking water, the EPA promulgates and enforces requirements related to the prevalence of certain contaminants within public water supply systems. The water quality information presented in the below tables is from the most recent round of testing done in accordance with these regulations. All results shown were from samples collected during the last calendar year unless otherwise noted in the tables. Only the detected contaminants are shown. The detectable presence of a contaminant does not necessarily indicate any health risks associated with the drinking water. Presented are five sets of contaminants and their respective limits that the water is regularly tested for and measured against: Microbiological; Primary; Secondary, Radioactive, and Lead & Copper Contaminants. The set of Primary Contaminants includes contaminants and their associated limits that are known to occur in public water supply systems and can adversely affect public health. The Secondary Parameters and their limits are set for both aesthetic purposes and for assisting the EPA in understanding their presence in drinking water and whether there is any need for future regulation of these contaminants.

MICROBIOLOGICAL SAMPLING

Substance	Sample Date	MCLG	MCL/AL	Highest Number Positive in Routine Monthly Samples	Violation	Possible Source(s) of Contamination and Health Language
Total Coliform	2020	0	>1/month TT	0.0	No	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system.

Fecal Coliform or E.coli	2020	0	0 TT	0.0	No	E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems.

PRIMARY CONTAMINANTS							
Substance	**Sample Date**	**MCLG/ MRDLG**	**MCL/ MRDL**	**(Highest) Detected or Running Average**	**Range Detected**	**Violation**	**Possible Source(s) of Contamination and Health Language**
Barium (ppm)	2020	2	2	(0.053)	0.0006 – 0.053	No	Erosion of natural deposits. Discharge from drilling waste and metal refineries. Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
Chlorine - Total (ppm)	2020	4	4	(1.38)	0.64-1.38	No	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess.
Nitrate (ppm)	2020	10	10	(0.54)	0.07 – 0.54	No	Runoff from fertilizer use; leaching from septic tanks; natural deposits. Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Fluoride (ppm)	2020	4	4	(0.67)	0.20 – 0.67	No	Erosion of natural deposits; water additive that promotes strong teeth.
Perchlorate (ppb)	2020	2.0	2.0	(0.09)	ND – 0.09	No	Rocket propellants, fireworks, munitions, flares, blasting agents. Perchlorate interferes with the normal function of the thyroid gland and thus has the potential to affect growth and development, causing brain damage and other adverse effects, particularly in fetuses and infants. Pregnant women, the fetus, infants, children up to the age of 12, and people with a hypothyroid condition are particularly susceptible to perchlorate toxicity.
Total TTHM (ppb)	Quarterly 2020	--	80	65	46.60-108	No	By-product of drinking water chlorination.
Total HAA5 (ppb)	Quarterly 2020	--	60	27	1.07-57.60	No	By-product of drinking water chlorination.
Turbidity (NTU)	2020	--	5.0 TT	0.81	0.01-0.81	No	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

SECONDARY CONTAMINANTS							
Substance	**Sample Date**	**Range Detected**	**Highest Detected**	**SMCL**	**ORSG or Health Advisory**	**Violation**	**Possible Source(s) of Contamination and Health Language**
Manganese (ppm)	2020	0.84 – 0.95	0.95	50	300*	No	Erosion of natural deposits. Use of water containing manganese at concentrations above the secondary MCL may result in aesthetic issues including the staining of laundry and plumbing fixtures and water with an unpleasant bitter metallic taste, odor, and/or black-brown color.
Sodium (ppm)	2020	14.1 – 54.5	54.5	250	20 **	NA	Some people who drink water containing sodium at high concentrations for many years could experience an increase in blood pressure. Discharge from the use and improper storage of sodium containing de-icing compounds or in water-softening agent. Use of salt for de-icing roads.

*US EPA and Mass DEP have established public health advisory levels for manganese to protect against concerns of potential neurological effects and a one-day and 10-day HA of 1000 ppb for acute exposure.
** Detected levels of sodium are well within recommended limits. Nonetheless, people restricted to sodium intake of 500 mg/day due to health issues such as high blood pressure, heart disease, or kidney failure should discuss with their doctors whether to drink Lincoln water.

RADIOACTIVE CONTAMINANTS							
Substance	**Sample Date**	**MCLG/ MRDLG**	**MCL/ MRDL**	**Highest Detected**	**Range Detected**	**Violation**	**Possible Source(s) of Contamination and Health Language**
Combined Radium (pCi/L)	2020	0	5	0.70	0.20-0.70	No	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer. Erosion of natural deposits.

LEAD & COPPER (SAMPLES COLLECTED FROM HOMES IN THE SERVICE AREA)							
Substance	**Sample Date**	**MCLG**	**MCL/AL**	**No. of Sites Sampled**	**90th %**	**Sites above AL**	**Possible Source(s) of Contamination**
Lead (ppb)	2020	0	15	20	0.001	0	Corrosion of household plumbing systems; Erosion of natural deposits.
Copper (ppm)	2020	1.3	1.3	20	0.212	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.

UNREGULATED CONTAMINANTS

Unregulated contaminants are those for which there are no established drinking water standards. The purpose of unregulated contaminant monitoring is to assist regulatory agencies in determining their occurrence in drinking water and whether future regulation is warranted.

Substance	**Sample Date**	**ORSG**	**Highest Detected**	**Range Detected**	**Violation**	**Possible Source(s) of Contamination and Health Language**
Chloroform (ppb) (67663)	2020	70	24.6	15.9-24.6	No	By-product of drinking water chlorination. Some people who drink water containing chloroform at high concentrations for many years could experience liver and kidney problems and may have an increased

						risk of cancer.
Bromodichloromethane (ppb) (75274)	2020	NA	7.35	4.52-7.35	No	By-product of drinking water chlorination. Some people who drink water containing bromodichloromethane at high concentrations for many years could experience liver and kidney problems.
Chlorodibromomethane (ppb)	2020	NA	1.30	0.60-1.30	No	By-product of drinking water chlorination
Bromoform (ppb) (75252)	2020	NA	0.66	ND-0.66	No	By-product of drinking water chlorination. Some people who drink water containing bromoform at high concentrations for many years could experience liver and kidney problems.

DEFINITIONS

ppm: parts per million or milligrams per liter (mg/L)
ppb: parts per billion or micrograms per liter (µg/L)
pCi/L: picocuries per liter (a measure of radioactivity)
NTU: Nephelometric Turbidity Units

Maximum Contaminant Level (MCL): 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.
Maximum Contaminant Level Goal (MCLG): 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.
Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
90th Percentile: Out of every 10 homes sampled, 9 were at or below this level. This number is compared to the action level to determine lead and copper compliance.
Secondary Maximum Contaminant Level (SMCL): These standards are developed to protect aesthetic qualities of drinking water and are not health based.
Unregulated Contaminants: Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted.
Office of Research and Standards Guideline (ORSG): This is the concentration of a chemical in drinking water at or below which adverse health effects are unlikely to occur after chronic (lifetime) exposure. If exceeded, it serves as an indicator of the potential need for further action.
Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.
Running Annual Average (RAA): The average of four consecutive quarters of data.
Maximum Residual Disinfectant Level (MRDL): 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.
Maximum Residual Disinfectant Level Goal (MRDLG): 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 contamination.