

# 2022 DRINKING WATER QUALITY REPORT

LYNNFIELD CENTER WATER DISTRICT, LYNNFIELD, MASSACHUSETTS

PWS ID# 3164000



## Important Drinking Water Information

All sources of drinking water (both tap and bottled water), including rivers, lakes, streams, ponds, reservoirs, springs, and wells, contain some naturally occurring contaminants or substances. 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 from human activity.

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 the water poses a health risk.

More information about contaminants and potential health effects can be obtained

by calling the Environmental Protection Agency's (EPA's) **Safe Drinking Water Hotline at 1-800-426-4791**. In order to ensure that tap water is safe to drink, the Massachusetts Department of Environmental Protection (MassDEP) and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and the Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health. This report provides you with information about the contaminants found naturally in your drinking water, the levels at which they were found, and the likely source of each contaminant.

### 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 stormwater 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 stormwater runoff, and residential uses.
- Organic chemical contaminants include synthetic and volatile organic chemicals that are byproducts of industrial processes and petroleum production and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants can be naturally occurring or be the result of oil and gas production and mining activities.

## How the Lynnfield Center Water District (LCWD) Treats Your Water

### For All of Our Well Sources:

**Sodium hypochlorite (chlorine)** is added in the treatment process and as a disinfectant to kill any germs that may be in the water and to ensure that the water in the distribution system remains safe to drink.

**Fluoride** is added to the water to reduce the incidence of dental cavities, particularly in children.

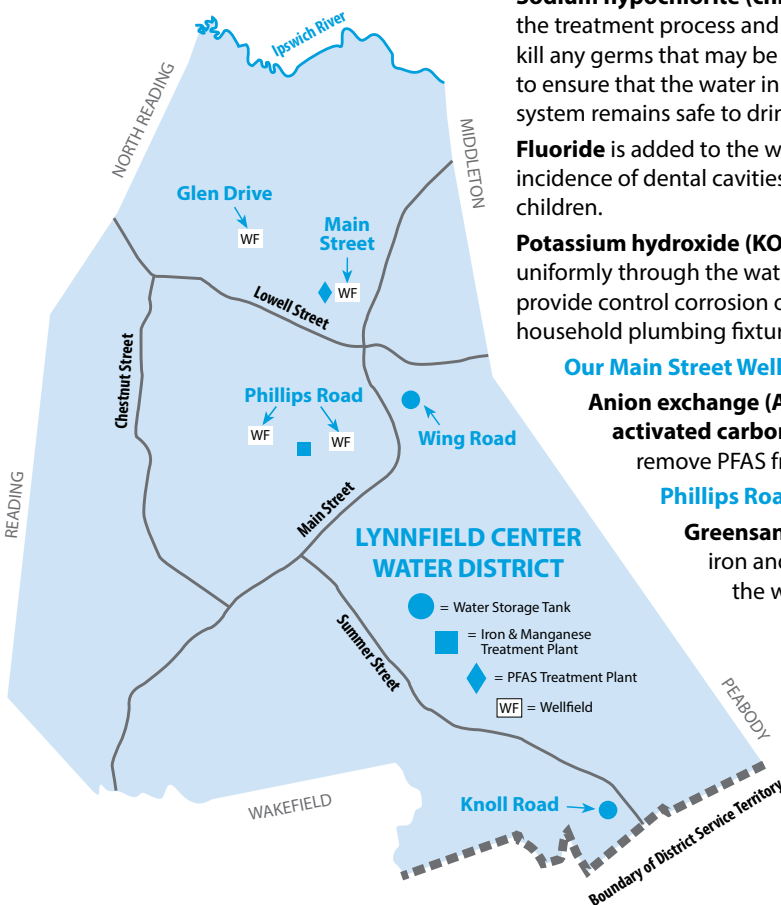
**Potassium hydroxide (KOH)** is mixed uniformly through the water to adjust pH and provide control corrosion of lead and copper household plumbing fixtures.

### Our Main Street Well:

**Anion exchange (AIX) and granular activated carbon (GAC) media** remove PFAS from the water

### Phillips Road Bedrock Wells:

**Greensand filters** remove iron and manganese from the water.



## Where does my water come from?

LCWD obtains its drinking water from four groundwater wellfields. The Glen Drive wellfield contains four bedrock wells. The Main Street wellfield contains a single gravel packed well. There are two wellfields in the Phillips Road area: a tubular wellfield with 60 wells and a wellfield with five wells, four of which are bedrock wells and one gravel packed well, all of which are treated at the Phillips Road greensand facility.

In addition to the wellfields, LCWD operates two storage tanks, one at Knoll Road and one at Wing Road. The distribution system consists of approximately 48 miles of water mains ranging in size from 2 to 16 inches in diameter.

# 2022 Water Quality Data

Listed below are 14 substances detected in the LCWD's drinking water during 2022 (unless noted otherwise). The LCWD also does additional testing well beyond what is required by federal and state regulations.

Not listed are more than 100 other substances for which we tested that were not detected during 2022.

Substance	Highest Detected Levels	Range of Detected Levels	Highest Level Allowed (MCL)	Goal (MCLG)	Source of Contamination
Regulated at the Water Supply Wells					
Fluoride <sup>[1]</sup>	0.6 ppm	ND – 0.6 ppm	4 ppm	4 ppm	Erosion of natural deposits; water additive that promotes strong teeth
Nitrate as Nitrogen	3.7 ppm	0.2 – 3.7 ppm	10 ppm	10 ppm	Runoff from fertilizer use; leaching from septic systems; erosion of natural deposits
Perchlorate	0.4 ppb	0.1 – 0.4 ppb	2 ppb	NA	Rocket propellants, fireworks, munitions, flares, blasting agents
PFAS6	23 ppt <sup>[2, v]</sup>	ND – 25.8 ppt	20 ppt	NA	⚡ Discharges and emissions from industrial and manufacturing sources associated with the production or use of these PFAS, including production of moisture- and oil-resistant coatings on fabrics and other materials. Additional sources include the use and disposal of products containing these PFAS, such as firefighting foams.
Radium (226 & 228 combined)	0.1 pCi/L	ND – 0.1 pCi/L	5 pCi/L	0 pCi/L	Erosion of natural deposits
Regulated at the Distribution System					
Chlorine (free or total)	0.6 ppm <sup>[3]</sup>	0.01 – 1.2 ppm <sup>[4]</sup>	2 ppb	NA	Rocket propellants, fireworks, munitions, flares, blasting agents
Haloacetic Acids <sup>[5]</sup>	11 ppb	9.5 – 11 ppb	60 ppb	NA	Byproduct of drinking water chlorination
Total Trihalomethanes <sup>[5]</sup>	35 ppb	28.7 – 35 ppb	80 ppb	NA	Byproduct of drinking water chlorination
Regulated at the Customer's Tap <sup>[6]</sup>					
Lead	14 ppb	ND – 21 ppb 2 results > AL	15 ppb	0 ppb	Corrosion of household plumbing systems, erosion of natural deposits
Copper	1.1 ppm	ND – 1.65 ppm 1 result > AL	1.3 ppm	1.3 ppm	Corrosion of household plumbing systems, erosion of natural deposits, leaching from wood preservatives

Substance	Average Detected Levels <sup>[7]</sup>	Range of Detected Levels	Highest Guidance Level (ORSG)	Source of Contamination
Guideline Contaminants				
Chloroform	7/28/22	1.77 ppb	70 ppb	Byproduct of drinking water disinfection
Sodium <sup>[7, 8]</sup>	13 ppm	Single sample	20 ppm	Discharge from the use and improper storage of sodium-containing de-icing compounds or in water-softening agents
Unregulated Contaminants <sup>[9]</sup>				
Perfluorobutanesulfonic Acid (PFBS)	2.6 ppt	ND – 4 ppt	Various	Refer to ⚡ above
Perfluorohexanoic Acid (PFHxA)	4.3 ppt	ND – 7 ppt	Various	Refer to ⚡ above

## FOOTNOTES

- [1] EPA's MCL for fluoride is 4 ppm. However, our state has set a lower MCL, 2 ppm, to better protect human health.
- [2] MassDEP requires that the single highest quarterly average be reported and notes that PFAS6 is a site-specific parameter that would not be averaged across sites. The range of detected results include all individual values without averaging. Any PFAS6 MCL violations need to be reported separately. The 23 ppt result was from Station #2 which received three PFAS violations in 2022, temporary treatment was brought online in the first quarter of 2023 to address PFAS concerns. See "Per- and Polyfluoroalkyl Substances (PFAS)" section for more information.
- [3] The highest level detected is based on the annual average of each month.

- [4] This range represents the individual results of all samples, rather than the averages.
- [5] Total trihalomethanes and five haloacetic acid levels are based on one sample taken at two MassDEP approved locations, in the third quarter of 2022.
- [6] Level shown indicates the 90th percentile, which is used to determine compliance with the Lead and Copper Rule and must be below the AL. Results based on 20 MADEP approved sample sites.
- [7] The ORSG for sodium is 20 ppm. 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.

- [8] Results from most recent testing in 2021.
- [9] 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.
- [v] The Main Street Well (Station 2) had PFAS6 in excess of the MassDEP MCL for three of the four quarters in 2022. Treatment is now online. See "How LCWD is Addressing PFAS" for more information.

## DEFINITIONS

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

> – Greater than

**Massachusetts Office of Research and Standards Guideline (ORSG)** – Guidance values developed by MassDEP ORS in absence of any other federal standards or guidance.

**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 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.

**Maximum Residual Disinfectant Level (MRDL)** – The highest level of a disinfectant (chlorine) 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 level of disinfectants required to control microbial contaminants.

**ND** – Not detected    **NA** – Not available

**pCi/L** – Picocuries per liter is a measure of the radio activity in water.

**ppb (Part Per Billion or Micrograms per Liter)** – (µg/L). One part per billion is the equivalent of \$1 in \$1,000,000,000.

**ppm (Part Per Million or Milligrams per Liter)** – (mg/L). One part per million is the equivalent of \$1 in \$1,000,000.

**ppt (Part Per Trillion or Nanograms per Liter)** – (ng/L). One part per trillion is the equivalent of \$1 in \$1,000,000,000,000.

**90th percentile** – Out of every 10 homes, 9 were at or below this level.

## Per- and Polyfluoroalkyl Substances (PFAS)

LCWD has been actively engaging with our customers and understands the emerging concerns about contaminants known as PFAS. PFAS have been manufactured and used in a variety of industries around the globe, including in the United States, since the 1940s. PFAS are found in firefighting foams as well as in a wide range of consumer products that people use daily, such as cookware, pizza boxes, and stain repellents.

Some people who drink water containing these PFAS in excess of the MCL may experience certain adverse effects. These could include effects on the liver, blood, immune system, thyroid, and fetal development. These PFAS may also elevate the risk of certain cancers. While consumer products and food are the largest source of exposure to these chemicals for most people, drinking water can be an additional source of exposure in communities where these chemicals have contaminated water supplies. In September 2021, we began proactively monitoring our four drinking water sources

ahead of October 2021 when the MassDEP's standard went into effect for LCWD. The standard is 20 parts per trillion (ppt) for the sum of the following six PFAS (PFAS6) compounds: PFOS (perfluorooctanesulfonic acid), PFOA (perfluorooctanoic acid), PFNA (perfluorononanoic acid), PFHxS (perfluorohexanesulfonic acid), PFHpA (perfluoroheptanoic acid), and PFDA (perfluorodecanoic acid). A "part per trillion" is analogous to a drop of water in 20 Olympic-size swimming pools.

LCWD had PFAS6 results that exceeded the PFAS6 MCL drinking water standards for three compliance periods in 2022 (Station 2). Since the violations, a treatment system has been installed at Station 2 and brought online in the first quarter of 2023.

Additionally, LCWD did not adequately notify our customers of our Quarter 2, 2022 PFAS6 MCL violation, which constitutes a public notification violation. While LCWD posted general PFAS information and results to their website and did send out some general language within the September 2022 bills,

that language did not meet the requirements of public notification. For Quarter 3, 2022, public notification was sent out after the required timeframe. For more information on PFAS6 and LCWD, please visit [www.lcwd.us/pfas/](http://www.lcwd.us/pfas/).

## How the LCWD is Addressing PFAS

LCWD's temporary treatment for Station 2 is online and removing PFAS to below detection limits. In May 2023, the customer of the District approved borrowing to build a new treatment plant at Station 4 (Glen Drive) to treat for iron, manganese, and PFAS for both Stations 2 and 4. Finally, LCWD's interconnection with Wakefield/Massachusetts Water Resources Authority (MWRA) will add an additional source of water that meets current and proposed PFAS regulations.

The new Glen Drive water treatment plant (WTP) is scheduled to be online early in 2025. The Wakefield interconnection is scheduled to be constructed by the end of 2023 and providing MWRA water in 2025.

## LCWD's Source Water Assessment Program

### How are these sources protected?

The MassDEP has prepared a Source Water Assessment Program (SWAP) Report for the water supply sources serving the LCWD. The SWAP report notes the key issues: residential land uses and activities, presence of oil or hazardous material contamination sites, and comprehensive wellhead protection planning in the water supply protection areas. The report commends the LCWD on its existing source protection measures, which include posting "Public Drinking Water" signs, regular inspections of protection areas, prohibition of non-water-supply-related activities within the protection area, development of an "Emergency Response Plan" to deal with spills or other emergencies, and regular inspections of commercial and industrial activities by the Board of Health.

### Water System's Susceptibility

The wells for the LCWD are located within water supply protection areas. The primary recharge areas for the wells are predominantly forested and residential, with a small amount of recreational land use. The SWAP ranks susceptibility of wells by determining the presence of contamination threats within the well recharge areas. The SWAP ranks the Glen Drive wellfield susceptibility as moderate since there is at least one moderate threat land use within the recharge area, and the Phillips Road and Main Street wells susceptibility as high since there is at least one high-threat land use within the recharge area. Sources of moderate threats in the Glen Drive recharge area include potential contamination sources such as over fertilization at golf courses, residential

pesticide use/over application, above ground storage tanks, water treatment sludge lagoons, improper residential fuel oil storage, and malfunctioning septic systems. Sources of high threats in the Phillips Road and Main Street recharge areas include potential contamination sources such as improper fluid and fuel handling at gas stations and improper handling of underground storage tanks.

### Where can I see the SWAP Report?

The complete SWAP report is available at the LCWD and on line at [www.mass.gov/doc/lynnfield-center-water-district-swap-report/download](http://www.mass.gov/doc/lynnfield-center-water-district-swap-report/download).

For more information, call the LCWD at 781-334-3901.

## What can be done to improve protection? *The LCWD implements the following recommendations on an ongoing basis.*

### Residents can help protect sources by:

- Practicing good septic system maintenance.
- Supporting water supply protection initiatives at Town meetings.
- Taking hazardous household chemicals to hazardous materials collection days.
- Contacting the water department or Board of Health to volunteer for monitoring or education outreach to schools.
- Limiting pesticide and fertilizer use.

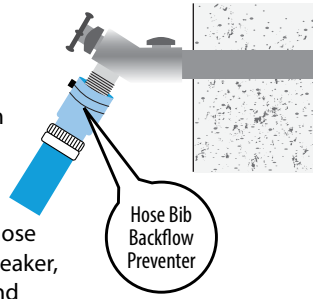
### The SWAP report recommends:

- Educating residents on proper disposal of hazardous materials.
- Providing residents with information on environmentally friendly household products.
- Educating residents on septic system care.
- Educating residents on environmentally sound lawn care
- Providing residents with educational materials on proper storage of liquid petroleum products in aboveground storage tanks.
- Monitoring progress on ongoing remedial action conducted for known oil or hazardous material contamination sites.
- Developing a land acquisition plan.
- Coordinating efforts with local officials in North Reading and Peabody to compare existing controls.
- Developing and implementing an inspection program for facilities that generate, use, store, or dispose of hazardous/toxic materials.

## Cross-Connection Control Program

A cross-connection is a connection between a drinking water pipe and a polluted source. The pollution can come from your own home. For example, to spray fertilizer on your lawn, you hook your hose up to the sprayer that contains the fertilizer. If the water pressure drops (for example, because of the fire hydrant use in the town) when the hose is connected to the fertilizer, the fertilizer may be sucked back into the drinking water pipes through the hose. Using an attachment on your hose called a backflow-prevention device can prevent this problem.

The LCWD recommends the installation of backflow-prevention devices, such as a low-cost hose bib vacuum breaker, for all inside and outside hose connections. You can purchase them at hardware or plumbing supply stores. This is a great way for you to help protect the water in your home as well as the drinking water system in your town!



## Private Wells and Cross-Connection Control

Many residents in Lynnfield own their own private wells, which are used for irrigation, in addition to receiving drinking water from the LCWD. If a residence is connected to both a private well and the LCWD's public water supply, the piping carrying the private well water and public water cannot be connected anywhere. Otherwise, an illegal cross-connection is created, through which private well water may be siphoned into the public water mains. Therefore, residences served by private wells must physically disconnect from

the public water system, or the pipes carrying private well and public water must be kept completely separate by means of an air gap. The physical separation between the private well and the public water supply, referred to as an air gap, must be at least twice the diameter of the water supply outlet, but never less than one inch.

If you own and use a private well, please contact the office to set up an inspection to make sure it is properly registered in the LCWD database.

## Vulnerability

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 provider. EPA/Centers for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available by calling:



**Safe Drinking Water  
Hotline**  
1-800-426-4791

## Important Health Information: Lead in Drinking Water

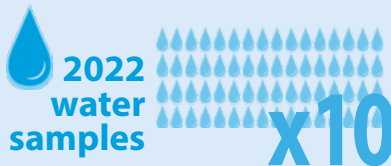
If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The LCWD is responsible for providing high-quality

drinking water, but it cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you

are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the **Safe Drinking Water Hotline** or found online at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).


## Compliance with Safety and Health Standards

LCWD's water meets and exceeds all state and federal standards. We test our water regularly using a certified laboratory. During 2022, we collected more than 1,000 water samples in the system that were then tested for compliance with state and federal health standards. State and federal regulators routinely monitor our compliance and testing protocols to ensure we deliver safe drinking water to our customers.



## Customer Views Welcome

To learn more about the water supply system, water quality, and other related information, contact the LCWD at:

 (781) 334-3901

 [www.LCWD.us](http://www.LCWD.us)

 [LCWD@LCWD.us](mailto:LCWD@LCWD.us)

 **Town Hall–Maney Room**

The LCWD's Board of Commissioners typically meet at least monthly in the Maney Room at Town Hall. Meetings are posted, and the agenda and minutes can be found on the website. This, along with additional information regarding daily operations, budgets and rates, projects, and other customer service–related items can be found on the website or by contacting the office by email.

The 2022 Drinking Water report describes the LCWD drinking water sources and treated water quality for calendar year 2022, as well as the programs that protect the high quality of our water supply.

This publication is mandated by the federal public-right-to-know regulation requiring community water suppliers to provide specific treated water-quality information annually to their customers.

Additional information beyond the minimum federal requirements is included, which addresses typical questions our customers ask about LCWD's water system.

Please share this information with other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses).