



ANNUAL WATER QUALITY REPORT

REPORTING YEAR 2020

Presented By
Town of Medfield



Quality First

Once again, we are pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2020. As in years past, we are committed to delivering the best-quality drinking water possible. To that end, we remain vigilant in meeting the challenges of new regulations, source water protection, water conservation, and community outreach and education while continuing to serve the needs of all our water users. Thank you for allowing us the opportunity to serve you and your family.

We encourage you to share your thoughts with us on the information contained in this report. After all, well-informed customers are our best allies.

FOG (Fats, Oils, and Grease)

You may not be aware of it, but every time you pour fat, oil, or grease (FOG) down your sink (e.g., bacon grease), you are contributing to a costly problem in the sewer collection system. FOG coats the inner walls of the plumbing in your house as well as the walls of underground piping throughout the community. Over time, these greasy materials build up and form blockages in pipes, which can lead to wastewater backing up into parks, yards, streets, and storm drains. These backups allow FOG to contaminate local waters, including drinking water. Exposure to untreated wastewater is a public health hazard. FOG discharged into septic systems and drain fields can also cause malfunctions, resulting in more frequent tank pump-outs and other expenses.

Communities spend billions of dollars every year to unplug or replace grease-blocked pipes, repair pump stations, and clean up costly and illegal wastewater spills. Here are some tips that you and your family can follow to help maintain a well-run system now and in the future:

NEVER:

- Pour fats, oil, or grease down the house or storm drains.
- Dispose of food scraps by flushing them.
- Use the toilet as a waste basket.

ALWAYS:

- Scrape and collect fat, oil, and grease into a waste container such as an empty coffee can, and dispose of it with your garbage.
- Place food scraps in waste containers or garbage bags for disposal with solid wastes.
- Place a wastebasket in each bathroom for solid wastes like disposable diapers, creams and lotions, and personal hygiene products including nonbiodegradable wipes.

Community Participation

The Board of Water and Sewerage meetings are typically held monthly at the Medfield Town House, 459 Main Street, Medfield, MA. Meetings are posted with the Town Clerk and are posted on the Town of Medfield Web site: www.town.medfield.net.

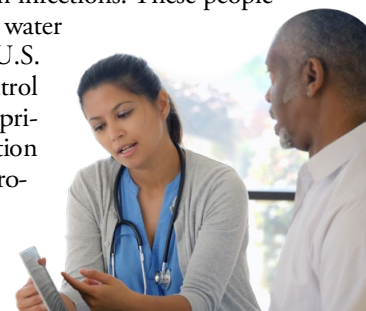
SWAP

The Source Water Assessment and 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 high was assigned to the Medfield Water System using the information collected during the water system assessment by the Massachusetts Department of Environmental Protection (MassDEP). It is important to understand that this susceptibility rating does not imply poor water quality, only the system's potential to become contaminated within the assessment area. The complete SWAP report is available at the Water Department and online at www.mass.gov/eea/docs/dep/water/drinking/swap/cero/3175000.pdf. For more information, contact Maurice Goulet at (508) 906-3002.

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Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.



QUESTIONS? For more information about this report, or for any questions relating to your drinking water, please call Maurice Goulet, Superintendent of Public Works, at (508) 906-3002 or email at mgoulet@medfield.net.

What's a Cross-Connection?

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

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

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

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

Lead in Home Plumbing

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high-quality drinking water, but we 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 at (800) 426-4791 or at www.epa.gov/safewater/lead.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the Massachusetts Department of Environmental Protection (MassDEP) and the U.S. Environmental Protection Agency (U.S. EPA) prescribe regulations limiting the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) 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 some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of 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. Substances that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Where Does My Water Come From?

The origin of our water is five groundwater supply wells referred to as Wells 1, 2, 3, 4, and 6. (Note: Well 4 is currently inactive, and Well 5 was not fully constructed due to high levels of iron and manganese in its water.) The groundwater supply is not exposed to air and is not subject to direct pollution and contamination like a river or reservoir (surface water). In fact, groundwater is the highest quality of water available to meet the public health demand of water intended for human consumption. Wells 1, 2, and 6 are located in the Charles River Aquifer, while Wells 3 and 4 are located in the Neponset River Aquifer. The water system also includes two water storage tanks and approximately 80 miles of water main.

Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule. Also, the water we deliver must meet specific health standards. Here, we show only those substances that were detected in our water. (A complete list of all our analytical results is available upon request.) Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The state recommends monitoring for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

We participated in the 4th stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR4) program by performing additional tests on our drinking water. UCMR4 sampling benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if the EPA needs to introduce new regulatory standards to improve drinking water quality. Unregulated contaminant monitoring data are available to the public, so please feel free to contact us if you are interested in obtaining that information. If you would like more information on the U.S. EPA's Unregulated Contaminant Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

REGULATED SUBSTANCES

| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | MCL [MRDL] | MCLG [MRDLG] | AMOUNT DETECTED | RANGE LOW-HIGH | VIOLATION | TYPICAL SOURCE |
|--|-----------------|---------------|-----------------|--------------------|-------------------|-----------|---|
| Haloacetic Acids [HAAs] (ppb) | 2020 | 60 | NA | 1 | ND-2 | No | By-product of drinking water disinfection |
| Nitrate (ppm) | 2020 | 10 | 10 | 1.735 | 0.48-3.4 | No | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits |
| Perchlorate (ppb) | 2020 | 2 | NA | 0.105 | ND-0.19 | No | Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks, and explosives |
| TTHMs [Total Trihalomethanes] (ppb) | 2020 | 80 | NA | 5.45 | 1.9-9 | No | By-product of drinking water disinfection |

Tap water samples were collected for lead and copper analyses from sample sites throughout the community.

| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | AL | MCLG | AMOUNT DETECTED (90TH %ILE) | SITES ABOVE AL/TOTAL SITES | VIOLATION | TYPICAL SOURCE |
|--------------------------------|-----------------|-----|------|-----------------------------------|----------------------------------|-----------|---|
| Copper (ppm) | 2019 | 1.3 | 1.3 | 0.96 | 1/30 | No | Corrosion of household plumbing systems; Erosion of natural deposits |
| Lead (ppb) | 2019 | 15 | 0 | 1 | 3/30 | No | Lead services lines; Corrosion of household plumbing systems including fittings and fixtures; Erosion of natural deposits |

Definitions

90th %ile: 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.

AL (Action Level): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that 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 MCLGs as feasible using the best available treatment technology.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that 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 or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable

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

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

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

TON (Threshold Odor Number): A measure of odor in water.



SECONDARY SUBSTANCES

| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | SMCL | MCLG | AMOUNT DETECTED | RANGE LOW-HIGH | VIOLATION | TYPICAL SOURCE |
|---------------------------------------|-----------------|------|------|--------------------|-------------------|-----------|--|
| Chloride (ppm) | 2020 | 250 | NA | 90 | 67–113 | No | Runoff/leaching from natural deposits |
| Iron (ppb) | 2020 | 300 | NA | 22.5 | ND–70 | No | Leaching from natural deposits; Industrial wastes |
| Manganese ¹ (ppb) | 2020 | 50 | NA | 39.93 | ND–145 | No | Leaching from natural deposits |
| Odor ² (TON) | 2020 | 3 | NA | 5.5 | 5–6 | No | Naturally occurring organic materials |
| Sulfate (ppm) | 2020 | 250 | NA | 24.15 | 22.7–25.6 | No | Runoff/leaching from natural deposits; Industrial wastes |
| Total Dissolved Solids [TDS] (ppm) | 2020 | 500 | NA | 295 | 230–360 | No | Runoff/leaching from natural deposits |
| Zinc (ppm) | 2020 | 5 | NA | 0.008 | 0.006–0.009 | No | Runoff/leaching from natural deposits; Industrial wastes |

UNREGULATED AND OTHER SUBSTANCES³

| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | AMOUNT DETECTED | RANGE LOW-HIGH | TYPICAL SOURCE |
|--------------------------------|-----------------|--------------------|-------------------|--|
| 1,4-Dioxane (ppb) | 2015 | 0.16 | 0–1.1 | Used as a solvent or solvent stabilizer |
| Alkalinity (ppm) | 2020 | 77.5 | 65–90 | Naturally occurring |
| Bromodichloromethane (ppb) | 2020 | 1.04 | ND–4.2 | By-product of drinking water disinfection |
| Calcium (ppm) | 2020 | 69.4 | 32.1–37.3 | Naturally occurring |
| Chlorate (ppb) | 2015 | 59.8 | ND–110 | Agricultural defoliant or desiccant; Disinfection by-product |
| Chlorodibromomethane (ppb) | 2020 | 1.87 | ND–3.8 | By-product of drinking water disinfection |
| Chlorodifluoromethane (ppb) | 2015 | 0.045 | ND–0.25 | Chlorofluorocarbon; Occurs as a gas; Used as a refrigerant, as a low-temperature solvent, and in fluorocarbon resins |
| Chloroform (ppb) | 2020 | 0.6 | ND–4 | By-product of drinking water disinfection |
| Chromium-6 (ppb) | 2015 | 0.19 | 0.07–0.31 | Naturally occurring element; Used for chrome plating, dyes and pigments, leather tanning, and wood preservation |
| HAA6Br | 2020 | 3.76 | 0.5333–6.034 | By-product of drinking water disinfection |
| HAA9 | 2020 | 5.83 | 0.533–10.764 | By-product of drinking water disinfection |
| Hardness (ppm) | 2020 | 126.5 | 110–143 | Naturally occurring |
| Potassium (ppm) | 2020 | 2.33 | 1.93–2.74 | NA |
| Sodium ⁴ (ppm) | 2020 | 36.67 | 11.3–59.3 | Naturally occurring |
| Strontium (ppb) | 2015 | 119 | 60–190 | Naturally occurring element; Historically, commercially used in the faceplate glass of CRT televisions |
| Vanadium (ppb) | 2015 | 0.21 | ND–0.5 | Naturally occurring elemental metal used as vanadium pentoxide, which is a chemical intermediate and a catalyst |

¹ 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 it can have undesirable effects on certain sensitive populations at elevated concentrations. The U.S. EPA and MassDEP have established public health advisory levels for manganese to protect against concerns of potential neurological effects.

² The results are affected by the inactive emergency Well #4 with an odor result of 5 TON.

³ Unregulated contaminants are those for which the U.S. EPA has not established drinking water standards. The purpose of monitoring unregulated contaminants is to assist the EPA in determining their occurrence in drinking water and whether future regulation is warranted.

⁴ The Massachusetts Department of Environmental Protection maintains a guideline level of 20 ppm for sodium.