ANNUAL WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2015

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

Cé rapport contient des information importantes concernant votre eau potable. Veuillez traduire, ou parlez avec quelqu' un qui peut le comprendre.

Presented By
Suez

PWS ID#: 2103000

Meeting the Challenge

Once again we are proud to present our annual drinking water report, covering all drinking water testing performed between January 1 and December 31, 2015. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best quality drinking water to your homes and businesses. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.

Please remember that we are always available to assist you, should you ever have any questions or concerns about your water.

Opportunities for Public Participation

If you would like to participate in discussions regarding your water quality, you may attend the Public Service Committee meetings. They are held every month before the City Council Meeting. Attending these meetings will allow you to discuss any agenda item and learn information about your water system. You may also contact Suez (formerly United Water Environmental Services) at the Crystal Lake Water Treatment Facility for additional information.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 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.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the Department of Environmental Protection (DEP) and the U.S. Environmental Protection Agency (U.S. EPA) prescribes 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, which 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 which 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.

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 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 at www.epa.gov/lead.

Is My Water Treated?

Our water system makes every effort to provide you with safe and pure drinking water, to improve the quality of the water delivered to you, we treat it to remove several contaminants.

- We add sodium hypochlorite and ammonium sulfate to protect you against microbial contaminants
- We add poly aluminum chloride to help coagulate the dirt particles within the untreated water to help the microfiltration process.
- We filter the water to remove small particles and organisms such as sediment, algae, and bacteria.
- We chemically treat the water to reduce lead and copper concentrations from leaching out of your household plumbing.
- We add sodium fluoride to the water to aid in dental health and hygiene.
- We add soda ash to adjust the pH of the water to assist in corrosion control of the distribution system.
- We chemically treat the water to reduce levels of iron and manganese.

Suez (formerly United Water Environmental Services) and MassDEP regularly monitor the quality of the water. It is monitored to determine the effectiveness of the existing water treatment and to determine if any additional treatment is required. Our water system makes every effort to provide you with safe and pure drinking water.

Where Does My Water Come From?

Your drinking water comes from "ground water" and "surface water" sources. The surface water supplies comprise three sources. They are Cowee Pond, Perley Brook Reservoir, and Crystal Lake, all of which are located within the City of Gardner. Water naturally flows by gravity from Cowee Pond to Perley Brook Reservoir and is then pumped to Crystal Lake.

The Snake Pond Well Treatment facility is the lone ground water source. This source is used as a secondary source to help with seasonal water demand issues.

The Crystal Lake Water Treatment Facility, which was upgraded in 2007, continues to produce high-quality drinking water. The Crystal Lake Water Treatment Facility, which uses microfiltration membrane filters, has a total capacity of 4.5 million gallons per day. 616 million gallons of "raw" water was pumped from Crystal Lake in 2015 and treated to produce 541 million gallons of "finished" water that was distributed to the City of Gardner.

The Snake Pond Well treatment facility, which was upgraded in 2006, continues to produce high-quality drinking water. This ground water facility was upgraded to treat the amount of manganese and iron that is naturally found in ground water. At this time, it is capable of treating these high levels of metals and has been online since April 2006. This facility pumped 103 million gallons of "raw" water to produce 100 million gallons of "finished" water that was distributed to the City of Gardner and has a capacity of 1.3 million gallons a day.

There are three drinking water storage tanks in the City of Gardner. They are above-ground storage tanks and are used to help ensure a safe, reliable supply of drinking water and to provide fire protection. The combined capacity of these storage tanks is 4.75 million gallons.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Mark A. Richard, Assistant Project Manager, at (978) 630-8791.

The Benefits of Fluoridation

Fluoride is a naturally occurring element in many water supplies in trace amounts. In our system, the fluoride level is adjusted to the new optimal level averaging 0.7 part per million (ppm) to improve oral health in children. At this level, it is safe, odorless, colorless, and tasteless. Our water system has been providing this treatment since 1987. There are more than 3.9 million people in 140 Massachusetts water systems and 184 million people in the U.S. who receive the health and economic benefits of fluoridation.

Water Conservation

You can play a role in conserving water and saving yourself money in the process by becoming conscious of the amount of water your household is using. It is not hard to conserve water. Here are a few tips: Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity; Turn off the tap when brushing your teeth; Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year; Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year; Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

Source Water Assessment

The Department of Environmental Protection (DEP) has prepared a Source Water Assessment Program (SWAP) Report for the water supply source(s) serving this water system. This report assesses the susceptibility of each source of public water supplies. A susceptibility ranking of HIGH was assigned to this system using information collected during the assessment by the DEP.

The SWAP Report is available at your Water Department billing office and at the Board of Health. Both of these offices are located within Gardner City Hall. This plan is an assessment of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area and a determination of the water supply's susceptibility to contamination by the identified potential sources.

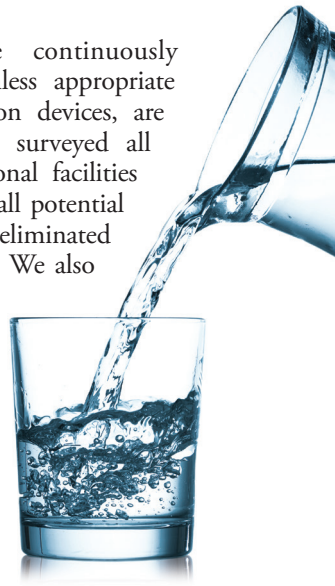
What's a Cross-connection?

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 all industrial, commercial, and institutional facilities in the service area to make sure that all potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test each backflow preventer to make sure that it is providing maximum protection.

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



Sampling Results

During the past year, we have taken hundreds of water samples to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor for certain substances less 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 3rd stage of the EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program by performing additional tests on our drinking water. UCMR3 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 EPA needs to introduce new regulatory standards to improve drinking water quality. Contact us for more information on this program.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2015	2	2	0.020	ND–0.020	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine[1] (ppm)	2015	[4]	[4]	2.08	0.880–3.34	No	Water additive used to control microbes
Combined Radium (pCi/L)	2015	5	0	0.26	ND–0.26	No	Erosion of natural deposits
Fluoride[1] (ppm)	2015	4	4	0.761	0.200–1.20	No	Water additive which promotes strong teeth
Haloacetic Acids [HAA][1] (ppb)	2015	60	NA	26	3.5–29	No	By-product of drinking water disinfection
Nitrate (ppm)	2015	10	10	0.07	0.04–0.07	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perchlorate (ppb)	2015	2	NA	0.15	0.11–0.15	No	Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks and explosives
TTHMs [Total Trihalomethanes][1] (ppb)	2015	80	NA	42	2.7–62	No	By-product of drinking water disinfection
Total Organic Carbon (ppm)	2015	TT	NA	2.076	1.84–2.33	No	Naturally present in the environment
Turbidity[2] (NTU)	2015	TT	NA	0.38	0.010–0.38	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2015	TT = 95% of samples < 0.3 NTU	NA	99.46	NA	No	Soil runoff

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%TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2015	1.3	1.3	0.14	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2015	15	0	3	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Aluminum (ppb)	2015	200	NA	52	ND–52	No	Erosion of natural deposits; Residual from some surface water treatment processes
Chloride (ppm)	2015	250	NA	109	92–109	No	Runoff/leaching from natural deposits
Copper (ppm)	2015	1.0	NA	0.023	0.004–0.023	No	Corrosion of household plumbing systems; Erosion of natural deposits
Fluoride (ppm)	2015	2.0	NA	0.761	0.200–1.20	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Iron (ppb)	2015	300	NA	23	ND–23	No	Leaching from natural deposits; Industrial wastes
Manganese (ppb)	2015	50	NA	42	ND–42	No	Leaching from natural deposits
pH (Units)	2015	6.5–8.5	NA	7.70	7.53–7.70	No	Naturally occurring

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Silver (ppb)	2015	100	NA	2	ND–2	No	Industrial discharges
Sulfate (ppm)	2015	250	NA	31	9–31	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2015	500	NA	340	232–340	No	Runoff/leaching from natural deposits
Zinc (ppm)	2015	5	NA	0.009	0.006–0.009	No	Runoff/leaching from natural deposits; Industrial wastes

UNREGULATED SUBSTANCES [3]

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromodichloromethane (ppb)	2015	5.9	ND–5.9	Disinfection by-product
Chlorodibromomethane (ppb)	2015	1.2	ND–1.2	Disinfection by-product
Chloroform (ppm)	2015	8.9	ND–8.9	Disinfection by-product
Sodium (ppm)	2015	38	34–38	Natural sources; runoff from use as salt on roadways; by-product of treatment process

UNREGULATED CONTAMINANT MONITORING RULE PART 3 (UCMR3) [3]

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Chlorate (ppb)	2013	535.49	245.75–779.76	Known by-product of the drinking water disinfection process, forming when sodium hypochlorite is used in the disinfection process
Strontium (ppb)	2013	86.77	65.50–130.27	Naturally occurring element

[1] Results are Locational Running Annual Average/Running Annual Average.

[2] Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

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

Definitions

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

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

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

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.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

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): SMCLs are established to regulate the aesthetics of drinking water like taste and odor.

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