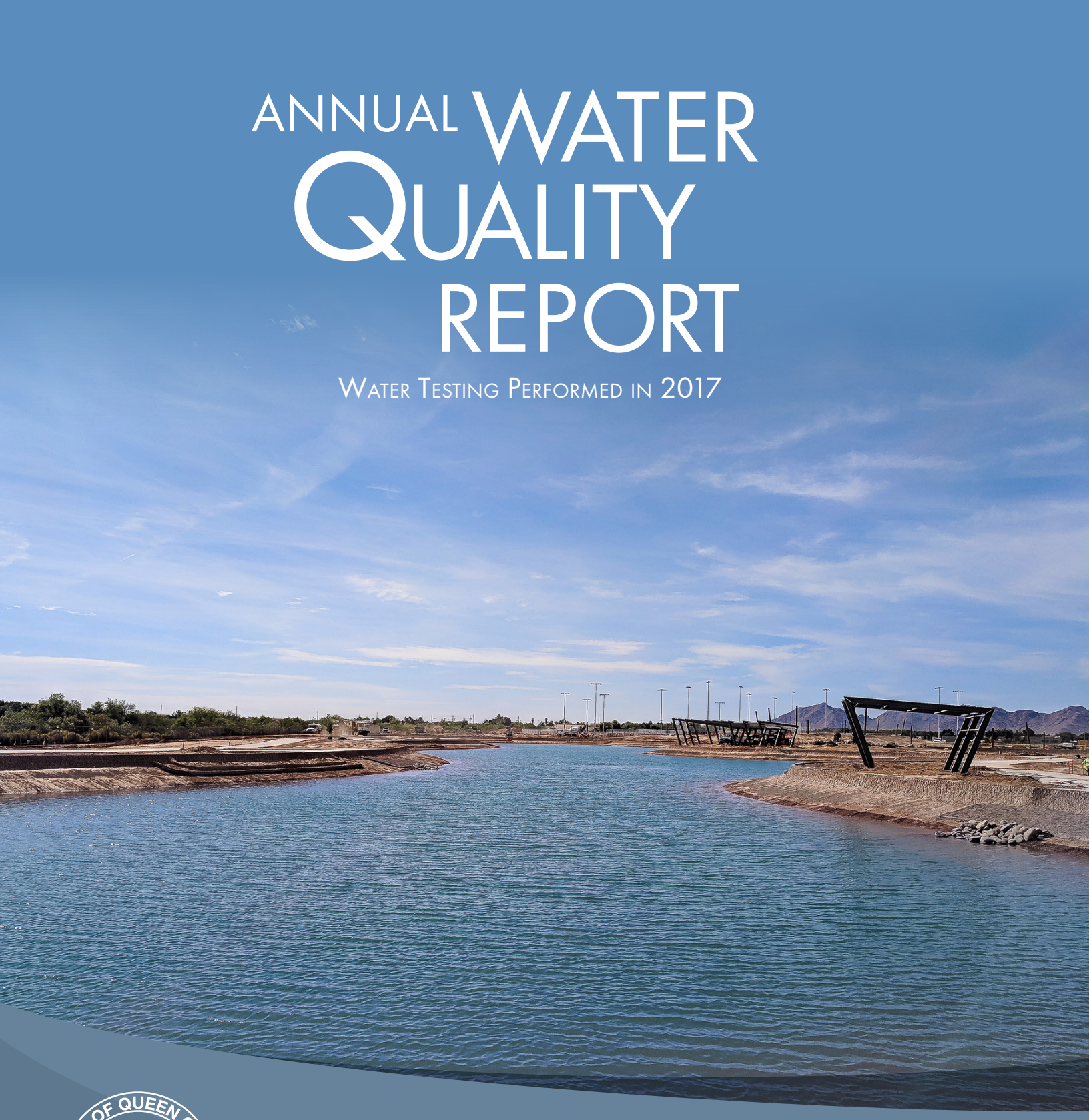
ANNUAL WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2017



TOWN OF QUEEN CREEK ARIZONA

WATER

Produced by the Town of Queen Creek

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

PWS ID#: AZ0407033

Commitment to Quality

The Town of Queen Creek is pleased to present the 2017 Annual Water Quality Report. As in years past, we are committed to delivering the best-quality drinking water possible while maintaining affordability. We remain dedicated to meeting the challenges of new regulations, source water protection, water conservation, and community outreach and education while continuing to serve the needs of all of our water users. Thank you for allowing us the opportunity to serve you and your family.

The Water Division ended the 2017 year with over 27,000 active connections, reflecting the exceptional new single family home and commercial growth within the service area. We are excited about the expected continued growth, with an estimated service population of approximately 80,000 by end of 2020.

The Water Division continues to focus on system integrity through water storage tank maintenance and painting to preserve both water quality and infrastructure lifespan. Approximately five miles of new water mainlines have been installed, allowing the water system to operate more efficiently. We continue to aggressively pursue our meter testing and replacement program, which helps the Water Division ensure that water meters measure accurately, minimizing water loss.

The rehabilitation and conversion of agriculture wells to potable water sources continued in 2017 to provide additional water production to serve the fast-paced growth within the community.

Our GIS and technology staff continue to evaluate and develop methods to improve efficiencies through technological changes, to allow staffing to access information remotely and enabling faster response to work-order completion or emergency mitigation. Improvements are also continually evaluated and improved upon to allow customers more access to billing and scheduling for potable water information. 2017 also saw the first phase of implementation of Flexnet meter reading, which will allow remote access of water meters and data in an effort to achieve real-time monitoring.

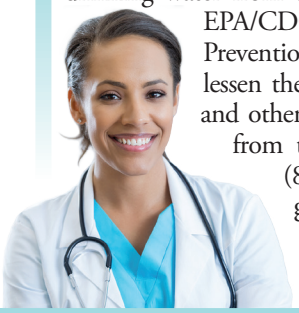
We greatly appreciate the partnership we have cultivated with the community and are honored to serve you in the future.

Important Health Information

While your drinking water meets the U.S. EPA's standard for arsenic, it does contain low levels of arsenic. The EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than 6 months of age. High nitrate levels in drinking water can cause "blue baby syndrome." Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask advice from your health care provider.

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.



Source Water Assessment

In 2002, the Arizona Department of Environmental Quality (ADEQ) completed a source water assessment for six groundwater wells used by the Queen Creek Water Company, now known as the Town of Queen Creek Water Division. The assessment reviewed adjacent land uses that could pose risks to water sources. These risks include, but are not limited to, gas stations, landfills, dry cleaners, agricultural fields, wastewater treatment plants, and mining activities. Once ADEQ identified the adjacent land uses, the source waters were ranked according to their potential to become contaminated. The result of the assessment for the six wells was low risk from adjacent land use and low risk to source water. For more information or to request a copy, please contact Nicole Petker, Water Resources Analyst with the Town of Queen Creek Utilities Services Department at (480) 358-3459 or email at Nicole.Petker@queencreek.org

What's Your Water Footprint?

You may have some understanding about your carbon footprint, but how much do you know about your water footprint? The water footprint of an individual, community, or business is defined as the total volume of freshwater that is used to produce the goods and services that are consumed by the individual or community or produced by the business. For example, 11 gallons of water are needed to irrigate and wash the fruit in one half-gallon container of orange juice. 37 gallons of water are used to grow, produce, package, and ship the beans in that morning cup of coffee. 264 gallons of water are required to produce one quart of milk, and 4,200 gallons of water are required to produce two pounds of beef.

According to the U.S. EPA, the average American uses 300 gallons of water daily. In fact, in the developed world, one flush of a toilet uses as much water as the average person in the developing world allocates for an entire day's cooking, washing, cleaning, and drinking. The annual American per-capita water footprint is about 8,000 cubic feet, twice the global per-capita average. With water use increasing six-fold in the past century, our demands for freshwater are rapidly outstripping what the planet can replenish.

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 all personal wipes, even if they say flushable. Flushable wipes do not biodegrade quickly enough and can cause pipes to clog. This creates costly time-consuming issues for the Town's sewer system.

Water Conservation Tips

You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. 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.
- 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.
- Water your landscape appropriately for our desert environment. Visit www.QueenCreek.org/WaterGuides to learn how much water your plants and turf need to thrive and remember to adjust your controller seasonally.

QUESTIONS?

For more information about this report or to ask questions relating to your drinking water, please contact Nicole Petker, P.E., Water Resources Analyst with the Town of Queen Creek Utility Services Department, at (480) 358-3459 or send email to Nicole.Petker@queencreek.org.

Town Council Meetings are usually held on the first and third Wednesdays of each month. All meetings are open to the public. The community is invited to address Town Council regarding water quality concerns during regularly scheduled council meetings. Schedules and agendas can be found at www.queencreek.org/town-hall.

Where Our Water Comes From

The Town of Queen Creek's drinking water comes from a combination of groundwater wells. Groundwater is pumped from any number of the 14 active drinking water wells located throughout Queen Creek. Water is either pumped directly into the distribution system or pumped to fill a water storage tank for future use. A small amount of chlorine disinfection is applied at entry points to the distribution system in order to maintain federal drinking water standards.

Substances That Could Be in Water

To ensure that tap water is safe to drink, Arizona Department of Environmental Quality prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water. 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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Contaminants 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 in tap water and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791 or visit online at www.epa.gov/safewater/hotline. Information on bottled water can be obtained from the U.S. Food and Drug Administration.

Lead in Home Plumbing

Lead, in drinking water, is primarily from materials and components associated with service lines and home plumbing. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. 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. 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/safewater/lead.

Count on Us

Delivering high-quality drinking water to our customers involves far more than just pushing water through pipes. Because tap water is highly regulated by state and federal laws, water treatment plant and system operators must be licensed and are required to commit to long-term, on-the-job training before becoming fully qualified. Our licensed water professionals have a basic understanding of a wide range of subjects, including mathematics, biology, chemistry, and physics. Some of the tasks they complete on a regular basis include:

- Operating and maintaining equipment to purify and clarify water;
- Monitoring and inspecting machinery, meters, gauges, and operating conditions;
- Conducting tests and inspections on water and evaluating the results;
- Maintaining optimal water chemistry;
- Applying data to formulas that determine treatment requirements, flow levels, and concentration levels;
- Documenting and reporting test results and system operations to regulatory agencies; and
- Serving our community through customer support, education, and outreach.

So, the next time you turn on your faucet, think of the skilled professionals who stand behind each drop.

Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council, bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25 percent of bottled water is actually just bottled tap water (40 percent, according to government estimates).

The Food and Drug Administration is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Furthermore, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70 percent of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to $1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water.

For a detailed discussion on the NRDC study results, check out their Web site at https://goo.gl/Jxb6xG.

Benefits of Chlorination

Disinfection, a chemical process used to control disease-causing microorganisms by killing or inactivating them, is unquestionably the most important step in drinking water treatment. By far the most common method of disinfection in North America is chlorination.

Before communities began routinely treating drinking water with chlorine (starting with Chicago and Jersey City in 1908), cholera, typhoid fever, dysentery, and hepatitis A killed thousands of U.S. residents annually. Drinking water chlorination and filtration have helped to virtually eliminate these diseases in the U.S. Significant strides in public health are directly linked to the adoption of drinking water chlorination. In fact, the filtration of drinking water plus the use of chlorine is probably the most significant public health advancement in human history.

How chlorination works:

Potent Germicide Reduction in the level of many disease-causing microorganisms in drinking water to almost immeasurable levels.

Taste and Odor Reduction of many disagreeable tastes and odors like foul-smelling algae secretions, sulfides, and odors from decaying vegetation.

Biological Growth Elimination of slime bacteria, molds, and algae that commonly grow in water supply reservoirs, on the walls of water mains, and in storage tanks.

Chemical Removal of hydrogen sulfide (which has a rotten egg odor), ammonia, and other nitrogenous compounds that have unpleasant tastes and hinder disinfection. It also helps to remove iron and manganese from raw water.

Tip Top Tap

The most common signs that your faucet or sink is affecting the quality of your drinking water are discolored water, sink or faucet stains, a buildup of particles, unusual odors or tastes, and a reduced flow of water. The solutions to these problems may be in your hands.

Kitchen Sink and Drain

Hand washing, soap scum buildup, and the handling of raw meats and vegetables can contaminate your sink. Clogged drains can lead to unclean sinks and backed-up water in which bacteria (e.g., pink and black slime growth) can grow and contaminate the sink area and faucet, causing a rotten egg odor. Disinfect and clean the sink and drain area regularly. Also, flush regularly with hot water.

Faucets, Screens, and Aerators

Chemicals and bacteria can splash and accumulate on the faucet screen and aerator, which are located on the tip of faucets, where they can collect particles like sediment and minerals, resulting in a decreased flow from the faucet. Clean and disinfect the aerators or screens on a regular basis.

Check with your plumber if you find particles in the faucet screen as they could be pieces of plastic from the hot water heater dip tube. Faucet gaskets can break down and cause black, oily slime. If you find this slime, replace the faucet gasket with a higher-quality product. White scaling or hard deposits on faucets and shower heads may be caused by hard water or water with high levels of calcium carbonate. Clean these fixtures with vinegar to reduce the calcium carbonate levels for the hot water system.

Water Filtration and Treatment Devices

A smell of rotten eggs can be a sign of bacteria on the filters or in the treatment system. The system can also become clogged over time, so regular filter replacement is important. (Remember to replace your refrigerator filter!)

Water Quality

To ensure the safety of tap water, the U.S. EPA prescribes regulations to limit the amount of contaminants found in your drinking water. The tables list relevant concentrations applicable to our water system. Our water system adheres to a strict strict sampling schedule in order to deliver water of an exceptionally high quality. The tables show only the latest contaminant detection from 2013 - 2017 sampling events, with a majority of testing occurring between January 1 and December 31, 2017. 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. All drinking water contains some form of naturally occurring contaminants. At low levels, these are not considered harmful to public health.

An electronic transmission error occurred with the submittal of our 3rd quarter Stage 2 DBP water sampling results to the State regulatory agency. The Town sent the compliance submittal more than 30 days prior to the required due date. However when the regulatory agency reviewed our submission and found that the results failed to transmit, it was over the due date resulting in a DBP monitoring violation. When the Town was made aware of the discrepancy, the required documentation was resubmitted within the hour.

This DBP reporting violation is required to be reported in the Town's Annual Water Quality Report. The water quality samples met regulatory standards and have been received and recorded by the State agency as required by state and federal law. There was no impact to public health or safety. The Town understands that the regulatory agency will be implementing an electronic reporting system in the near future. This new system will allow the secure and immediate transmission and recording of data which is expected to eliminate the possibility of transmission errors.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2017	15	0	3.6	ND–3.6	No	Erosion of natural deposits
Arsenic (ppb)	2017	10	0	2.6	ND–2.6	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2017	2	2	0.044	0.020–0.044	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2017	[4]	[4]	0.99	0.82–0.99	No	Water additive used to control microbes
Chromium (ppb)	2017	100	100	4.2	1.4–4.2	No	Discharge from steel and pulp mills; Erosion of natural deposits
Combined Radium (pCi/L)	2017	5	0	0.8	ND–0.8	No	Erosion of natural deposits
Fluoride (ppm)	2017	4	4	0.32	0.19–0.32	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs] (ppb)	2017	60	NA	4.6	ND–4.6	No	By-product of drinking water disinfection
Nitrate (ppm)	2017	10	10	6.9	0.52–6.9	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2017	80	NA	16	2–16	No	By-product of drinking water disinfection
Uranium (ppb)	2017	30	0	2.3	0.00023–2.3	No	Erosion of natural deposits

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)	2016	1.3	1.3	0.13	0/32	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2016	15	0	1.5	1/32	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
Chloride (ppm)	2016	250	NA	130	130–130	No	Runoff/leaching from natural deposits
Copper (ppm)	2016	1.0	NA	0.002	0.0017–0.0023	No	Corrosion of household plumbing systems; Erosion of natural deposits
Sulfate (ppm)	2016	250	NA	63	62–63	No	Runoff/leaching from natural deposits; Industrial wastes
pH (Units)	2016	6.5–8.5	NA	8.0	7.6–8.0	No	Naturally occurring
Total Dissolved Solids [TDS] (ppm)	2016	500	NA	690	460–880	No	Runoff/leaching from natural deposits

UNREGULATED AND OTHER SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
2-Butanone (ppb)	2017	8.0	ND–8.0	Industrial solvent; Also occurs naturally in small traces
Bromodichloromethane (ppm)	2017	0.00103	ND–0.00103	By-product of chlorine disinfection
Bromoform (ppm)	2017	0.0102	0.00050–0.0102	By-product of chlorine disinfection
Calcium (ppm)	2016	90	45–90	Runoff/leaching of natural deposits
Chlorodibromomethane (ppm)	2017	0.0020	0.00052–0.0020	By-product of chlorine disinfection
Dibromoacetic Acid (ppm)	2017	0.0035	ND–0.0035	By-product of disinfection
Dibromochloromethane (ppm)	2017	0.0048	0.00093–0.0048	Disinfection by-product
Dichloroacetic Acid (ppm)	2017	0.0011	ND–0.0011	By-product of chlorine disinfection
Magnesium (ppm)	2016	30	9–30	Runoff/leaching of natural deposits
Monobromoacetic Acid (ppm)	2017	0.00101	ND–0.00101	By-product of chlorine disinfection
Sodium (ppm)	2017	86	44–86	Naturally occurring

Definitions

AL (Action level): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a community water system shall 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. Amount Detected values for TTHMs and HAAs are reported as the highest LRAAs.

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.

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 appearance, taste and odor.

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