ANNUAL

Water Quality Report

WATER TESTING PERFORMED IN 2018

Where Our Water Comes From

The Town of Queen Creek's drinking water comes from groundwater wells. Groundwater is pumped from any number of the 20 active drinking water wells located throughout the Town. 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.

TOWN OF QUEEN CREEK ARIZONA

PRODUCED BY THE TOWN OF QUEEN CREEK

Commitment to Quality

The Town of Queen Creek Water Division is proud to present our 2018 annual water quality report. We are grateful to the countless individuals who have worked hard to ensure our high-quality drinking water remains consistently excellent. 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 our water users. Thank you for allowing us the opportunity to serve you and your family.

The Water Division ended the 2018 year with over 28,000 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 30 miles of new waterlines have been installed, allowing the water system to operate more efficiently.

Five new wells were added to our water sources, with more anticipated to come online in 2019. We continue to aggressively pursue our meter testing and replacement program, which helps ensure that water meters measure accurately, minimizing water loss.

Our geographic information systems and technology staff continue to evaluate and develop methods to improve efficiencies through technological changes, allowing staffing to access information remotely and enabling faster responses, work order completions and emergency mitigation. Improvements are continually evaluated to allow customers more access to billing and scheduling for potable water.

Conservation and responsible use of water continues to be a large focus of the Water Division. The Water Conservation Division held nine free water saving workshops for utility customers and several community events throughout 2018. Additionally, we partnered with various Arizona agencies to create water conservation focused educational activities for students and teachers. Twenty assemblies and 46 classroom presentations reached approximately 4,400 students in the Town of Queen Creek and San Tan Valley area schools.

As the Town of Queen Creek continues to grow and flourish, the Water Division remains dedicated to providing quality and reliable water. We greatly appreciate the partnership we have cultivated with the community and are honored to serve you in the future.

Paul Gardner, *Utilities Director, Town of Queen Creek*

Substances That Could be in Water

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. 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, 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, oil and gas production, mining, or farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

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.

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

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.

More information about contaminants and potential health effects can be obtained online at **EPA.gov/Safewater** or by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

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 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 are knowledgeable on 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 produce and store 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.
- 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 every drop.

Water Quality

To ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health. Some people may be more vulnerable to contaminants in drinking water than the general population.

2018 RESULTS

CONTAMINANT		SAMPLE YEAR	VIOLATION	RANGE	AVERAGE	MCL	MCLG	TYPICAL SOURCE
Arsenic	(ppb)	2018	No	7.0 – 7.0	7.0	10	0	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium	(ppm)	2018	No	.028 – .086	0.057	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine	(ppm)	2018	No	0.7 – 1.0	0.9	4	4	Water additive used to control microbes
Chromium	(ppb)	2018	No	4.8 – 7.7	6.2	100	100	Discharge from steel and pulp mills; Erosion of natural deposits
Di (2-ethylhexyl) pthalate	(ppb)	2018	No	ND – 0.7	0.7	6	0	Discharge from rubber and chemical factories
Fluoride	(ppm)	2018	No	0.3 – 0.5	0.5	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Gross Alpha excluding Radon and Uranium	(pCi/L)	2018	No	ND – 4.4	0.5	15	0	Erosion of natural deposits
Haloacetic Acids	(ppb)	2018	No	<2.0 – <0.20	Not detected	60	NA	By-product of drinking water disinfection
Nitrate	(ppm)	2018	No	0.5 – 9.4	4.2	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sodium	(ppm)	2018	No	72 – 130	91.8	NA	NA	Erosion of natural deposits
Total Trihalomethanes	(ppb)	2018	No	1.3 – 10.3	4.6	80	NA	By-product of drinking water disinfection
Uranium	(ppm)	2017	No	2.2	2.2	30	0	Erosion of natural deposits

Tap water samples collected for lead and copper analyses from specific community sample sites

CONTAMINANT		YEAR	VIOLATION	NUMBER OVER AL	90TH PERCENTILE	AL	MCLG	TYPICAL SOURCE
Copper	(ppm)	2016	No	0	0.13	1.3	1.3	Corrosion of household plumbing systems; Erosion of natural deposits
Lead	(ppb)	2016	No	1	1.5	15	0	Corrosion of household plumbing systems; Erosion of natural deposits

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** – Concentration too low to be detected by laboratory equipment

pCi/L: **picocuries per liter** – A measure of radioactivity

ppb: **parts per billion** – One part substance per billion parts (or micrograms per liter)

ppm: **parts per million** – One part substance per million parts (or milligrams per liter)

ADDITIONAL MONITORING

As part of an on-going evaluation program the EPA requires periodic monitoring of unregulated contaminants. Information collected helps the EPA determine if new regulatory standards are needed to improve drinking water quality. Contact us for more information on this program.

CONTAMINANT		RANGE	AVERAGE	TYPICAL SOURCE
Bromide	ppm)	0.01 – 1.4	0.13	Erosion of natural deposits
Bromochloroacetic acid	(ppb)	ND – 0.4	0.09	By-product of drinking water disinfection
Dichloroacetic acid	(ppb)	ND – 0.82	0.24	By-product of drinking water disinfection
Germanium	(ppb)	0.34 – 1.0	0.47	Naturally-occurring element; commercially available in combination with other elements and minerals; a byproduct of zinc ore processing; used in infrared optics, fiber-optic systems, electronics and solar applications
Manganese	(ppb)	ND – 1.0	0.55	Naturally-occurring element; commercially available in combination with other elements and minerals; used in steel production, fertilizer, batteries and fireworks; drinking water and wastewater treatment chemical; essential nutrient
Total Organic Carbon	(ppb)	ND – 0.41	0.03	Naturally present in environment

Stop Backflow Prevention Theft

The copper and brass pieces within your backflow preventer could be an easy target for theft, while creating costly repairs and potential damage for your home or business. A backflow preventer is installed on the water service line leading into commercial buildings, multi-family and single-family homes. Thieves take them for their copper and brass. The scrap metal value is approximately $40 to $100 per unit. New or replacement units cost $1,200 to $2,000 each.

Beyond financial costs, backflow preventers are important to protecting the water supply. A backflow preventer is used to protect potable (drinking) water supplies from contamination or pollution due to backflow. **Backflow preventers are the property owner's responsibility for repair, replacement and annual inspections/compliance.** Federal, State laws and Town of Queen Creek code require water suppliers to protect their water systems from contamination under the Safe Drinking Water Act, Arizona Department of Environmental Quality (Code R18-4-215) and the adopted Town codes.

DO YOU KNOW WHAT TO DO if your backflow preventer is stolen?

1. Turn off water supply valve to backflow device.
2. Report theft to Maricopa County Sheriff's Office at 602-876-1011.
3. Report theft to Town of Queen Creek Utilities at 480-358-3450.

TAKE PROACTIVE STEPS to stop backflow preventer theft around your home or business.

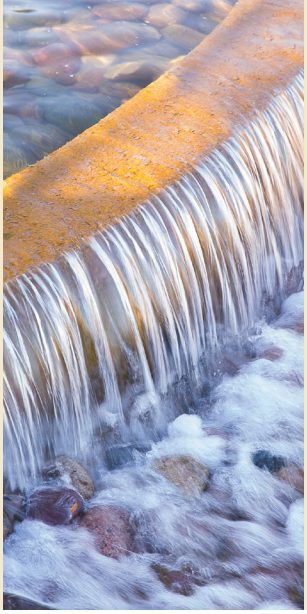
STEP 1 - Paint and label your backflow preventer.

STEP 2 – Enclose the backflow preventer within a protective cage. The cage should be secured or mounted to the ground. Ensure the cage is spot-welded to the bolts.

STEP 3 – Secure with a high-quality lock on the cage. "Hockey puck" style locks work best for cages without lock guards. Lock guards protect locks from bolt cutter access.

STEP 4 – Post visible warning signs that mention security and prosecution.

STEP 5 – Conceal your backflow preventer by covering and grouping with other natural landscape surroundings. You may consider using a heavy-duty enclosure box for industrial or high security facilities.



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 of the source water assessment, please contact Nicole Petker at (480) 358-3459 or email Nicole.Petker@queencreek.org

IMPORTANT **Health Information**

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 for infections. These people should seek advice from their health care provider about drinking water. EPA/CDC 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.

While your drinking water meets EPA standards for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of possible health effects against the costs of removing arsenic from drinking water. 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 six (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.

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. The Town of Queen Creek is 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 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 at (800) 426-4791 or **EPA.gov/Safewater**.

Water Conservation

Water is a precious natural resource. Please join the Town of Queen Creek and reduce your water use.
QueenCreek.org/ReducetheUse

FIVE TIPS TO REDUCE YOUR USE

1. **Water your landscape efficiently**

   Up to 70% of water use is outdoors. Find out how much water your landscape needs.
   QueenCreek.org/WaterGuides

2. **Are you using a lot of water and don't know where it's going?**

   Learn how to read your water meter and take charge!
   QueenCreek.org/WaterAudit

3. **Attend a FREE landscape workshop**

   Learn about drip system design and install, how to water your landscape properly, maintain and repair your irrigation system, utilize proper pruning techniques, use low water use plants for an inviting backyard and much more.
   QueenCreek.org/WaterSmart

4. **Hire a Smartscape trained landscape professional**

   A Smartscape landscaper is trained in planning, planting and caring for landscapes in our desert environment.
   Smartscape.org/Directory

5. **Take the guess work out of watering**

   For FREE monthly watering reminders, text WHENTOWATER to 33222.

The Town of Queen Creek Water Conservation is a proud partner of Water Use It Wisely, an organization devoted to promoting water conservation for a sustainable future. Sign up for their free monthly e-newsletter and get water-saving tips, conservation news and more delivered right to your inbox and become water wise. **WaterUseItWisely.com**

REDUCE THE USE
QC WATER CONSERVATION

WATER CONSERVATION EDUCATION IN THE SCHOOLS

The Town of Queen Creek is committed to creating a sustainable future for residents. We proudly partner with the Environmental Education Exchange and Abracadabra Productions to offer innovative, educational outreach to Queen Creek and San Tan Valley area schools.

Abracadabra Water Conservation Magic Shows are visually-engaging presentations, designed for K–4th grade.

Queen Creek's **Our Water, Our Future** is a water education program designed for 4th–5th grade students, addressing the water cycle, Queen Creek's water supply and water conservation.

WATER USE IT WISELY

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.

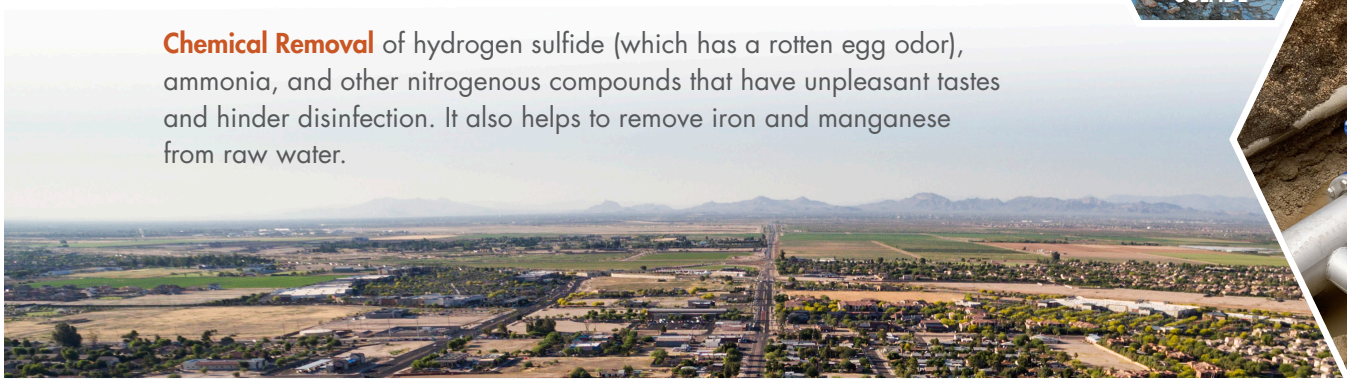
HOW CHLORINATION HELPS:

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.



QUESTIONS?

For more information about this report, or to ask drinking water related questions, please contact Nicole Petker, Water Resource Analyst, at **(480) 358-3459** or **Nicole.Petker@QueenCreek.org**.

Residents may provide public comment to the Queen Creek Town Council regarding water quality at the regularly scheduled Town Council Meetings, usually held on the first and third Wednesdays of each month. The Town Council meeting calendar can be viewed online at **QueenCreek.org/Calendar**.