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CITY OF OLATHE WATER QUALITY REPORT

2023

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WATER QUALITY REPORT

Cover photo was taken at Lake Olathe

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As Environmental Services Manager for the City of Olathe, I am proud to bring you the 2023 Consumer Confidence Report for drinking water quality that covers the 2022 calendar year!

In 2022, the City of Olathe treated 4.75 billion gallons of drinking water for an average daily demand of 13.0 million gallons per day. After production and treatment, our certified laboratory staff perform about 60,000 tests to ensure the quality and safety of your drinking water throughout the year.

Olathe's staff continue to deliver the same exceptional results, producing water that meets or exceeds all federal and state drinking water standards. The information shared in this report showcases our transparency as a utility and demonstrates the quality of water that is available to you at your tap.

Labor shortages were common last year, and the City of Olathe's water staff experienced their own staffing struggles. Our 38 professionals who oversee the water distribution piping that is located throughout town were put to the test throughout the year. For the water to make it to those distribution pipes, it first must be treated by water treatment professionals, who operate the Olathe Water Treatment Plant 24 hours per day, 365 days per year. In total, the Water Plant has 19 employees, 16 of which are plant operators spread across 5 shifts to ensure that we always have a minimum of 2 qualified operators at the plant at all times. For a variety of reasons, the treatment staff was down as many as three operators at points in 2022.

Having 16 employees, being down three might not sound like a lot, but when those employees have to train up the replacement staff, work all holidays, and cover any vacations amongst other existing employees, this turnover certainly put a strain on our top-notch staff. If you are looking for a career where you can contribute daily to the success of this community, please check OlatheKS.gov/Jobs to look for employment opportunities.

As we enter 2023, Olathe Water looks to build up and retain the talented new employees we have attracted to fill our vacancies. We also continue to look to the future and improve our operation. A new position that was created and filled for the Environmental Lab will be dedicated to quality assurance. Prior to the creation of this position, the responsibilities of quality assurance had been spread across multiple people. While they did a great job, regulations continue to get more stringent and rigorous and the best way to ensure our sustained compliance is with a single professional dedicated to overseeing quality assurance.

At the City of Olathe, we are passionate about our responsibility to safeguard the public with our water treatment, and we are diligent stewards with our rate payer's money to do this as economically as possible. We hope that the information you find in this report helps give you confidence this is the case. If you should have any questions about this report or about the water quality at your home or place of business, please reach out to us through OlatheKS.gov/OlatheConnect or by calling 913-971-9311.

John Gilroy, P.E.
Environmental Services Division Manager

Our Top Priority is Safe Drinking Water

The City of Olathe produces safe, quality drinking water that continues to meet or exceed state and federal health regulations. More than 60,000 tests are conducted every year to ensure our water supply is healthy and safe. In 2022, the City of Olathe had no drinking water violations.

This report provides a snapshot of the quality of the water that we provided last year. Included are the details about where your water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and state standards.

Where Our Water Comes From

Collector wells located along the Kansas River aquifer obtain untreated water. In 2022, 4.9 billion gallons of water was obtained from four large collector wells and 11 vertical wells. These wells filter surface water through the ground, desolving naturally occuring minerals.

Drinking Water and Your Health

Special Health Requirements

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as those undergoing chemotherapy or those who have undergone organ transplants, or people living with HIV/AIDS or other immune disorders, some elderly, and infants can be at particular risk for infections. If you fall in one of these categories, seek advice about drinking water from your health care provider.

Although microbial contamination in our

system is kept at bay by applying proper disinfection technologies during water treatment, 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 (800-426-4791).

Sources of Contaminants in Drinking Water

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 sources water before we treat it include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, 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 storm water run-off, agriculture, and residential users.
- Radioactive contaminants, which can be naturally occurring or the result of mining activity.
- Organic contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and also come from gas stations, urban storm water run-off, and septic systems.

In order to ensure that tap water is safe to drink, EPA regulates the amount of certain contaminants in water provided by public water systems. We treat our water to comply with EPA's regulations. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Lastly, 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 , but if you would like more information about contaminates and their potential health effects, go to OlatheKS.gov/OlatheConnect, call (913) 971-9311, or call the EPA's Safe Drinking Water Hotline at (800) 426-4791.

DO I NEED A WATER SOFTENER?

It's a personal choice. Since the EPA requires a certain degree of what we consider "hardness," you may notice some benefits of a softener, including using a lesser amount of soap and detergents and less spotting on hard surfaces. They can also leave your skin feeling softer, retaining more moisture.

Because many water softeners work by replacing calcium and magnesium with sodium, please be aware that consuming softened water may lead to increased sodium intake.

The data in this report is representative of water within the city's distribution system. Adding in-home water treatment systems may alter the chemistry of your water in ways that can be difficult to identify. Therefore, it is important to thoroughly research and/or confer with a professional when adding softening or filtration systems to your home's plumbing.

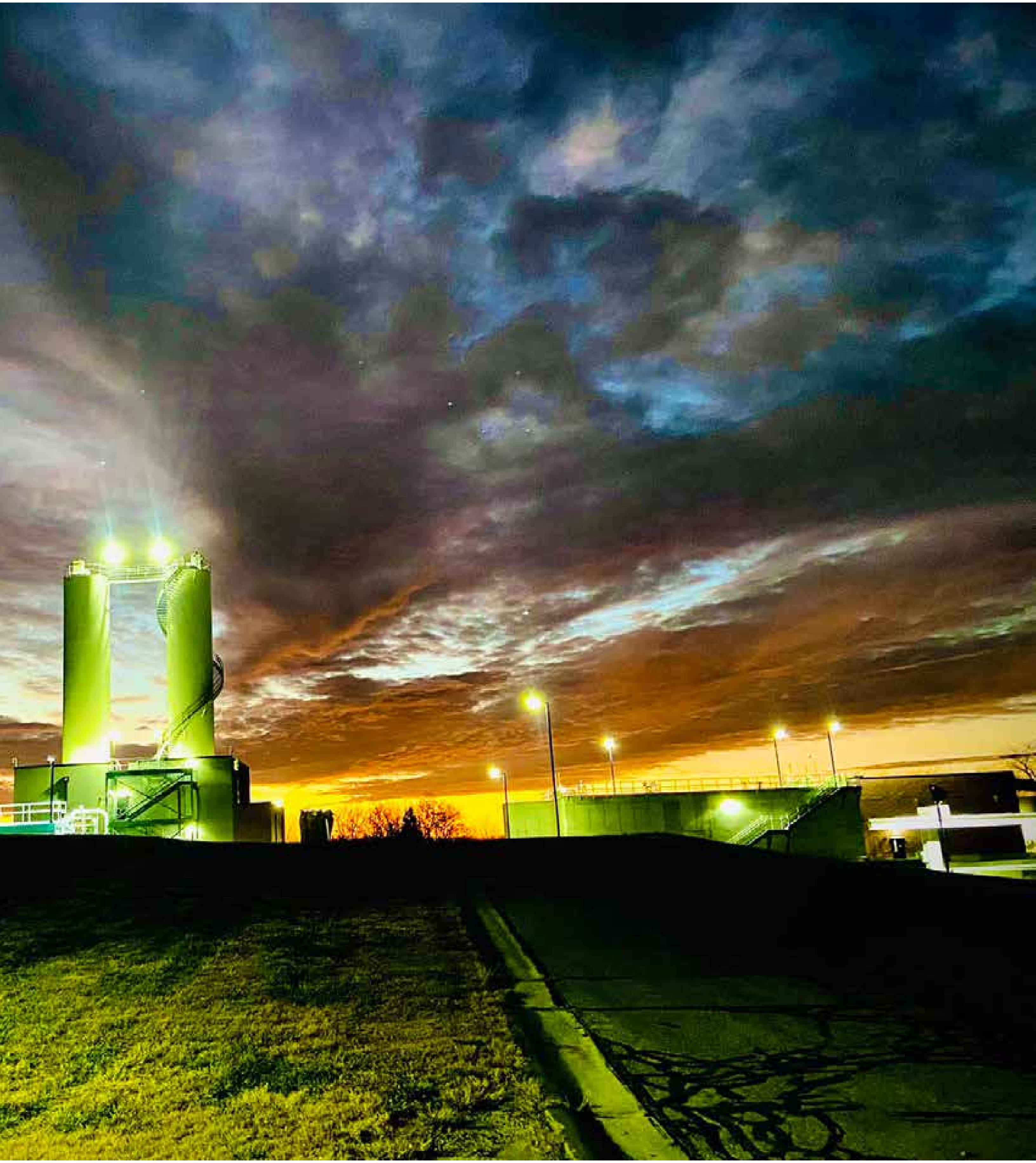
If you install a water softener and need to know the water hardness number in units of grains per gallon, simply divide our most recent total hardness value by 17.1. For example, total hardness of 180 ppm = 10.5 grains per gallon.

Lead and Copper Rule

In 2021, the United States Environmental Protection Agency (EPA) published the Lead and Copper Rule Revisions (LCRR) in the Federal Register to protect public health. The City of Olathe is compliant with the original Lead and Copper Rule and continues to set the standard, providing the highest quality drinking water for our residents.

To fulfill new federal requirements, the City is asking residents to complete an in-home service line inspection. Please fill out the in-home inspection survey to identify the service line material inside your home. The City currently has 6,451 unknown service lines to identify.

Please contact Megan Spence, Distribution Compliance Manager, at 913-444-0624 or OPREP@OlatheKS.org for more information. You may also send a picture of your service line to this number via text message if you have a question about your specific service line. Learn how to identify your service line and complete the survey by watching our tutorial video: https://youtube.com/shorts/2S46-SYsWKQ



Olathe Water Prices vs Bottled

A 24-pack of bottled water can cost **$4.99-$12.99** at a grocery store, while the same amount of tap water from Olathe costs just over a penny. While you may feel you are paying for quality, tap water is held to a higher standard, subject to more testing, and keeps your money in the community compared to bottled water.

Customer Satisfaction

Olathe citizens are surveyed quarterly to assess the level of citizen satisfaction with City services. Our customers consistently rate their overall quality of water services, including the taste of water, above the Kansas City Metro average as well as the national average.

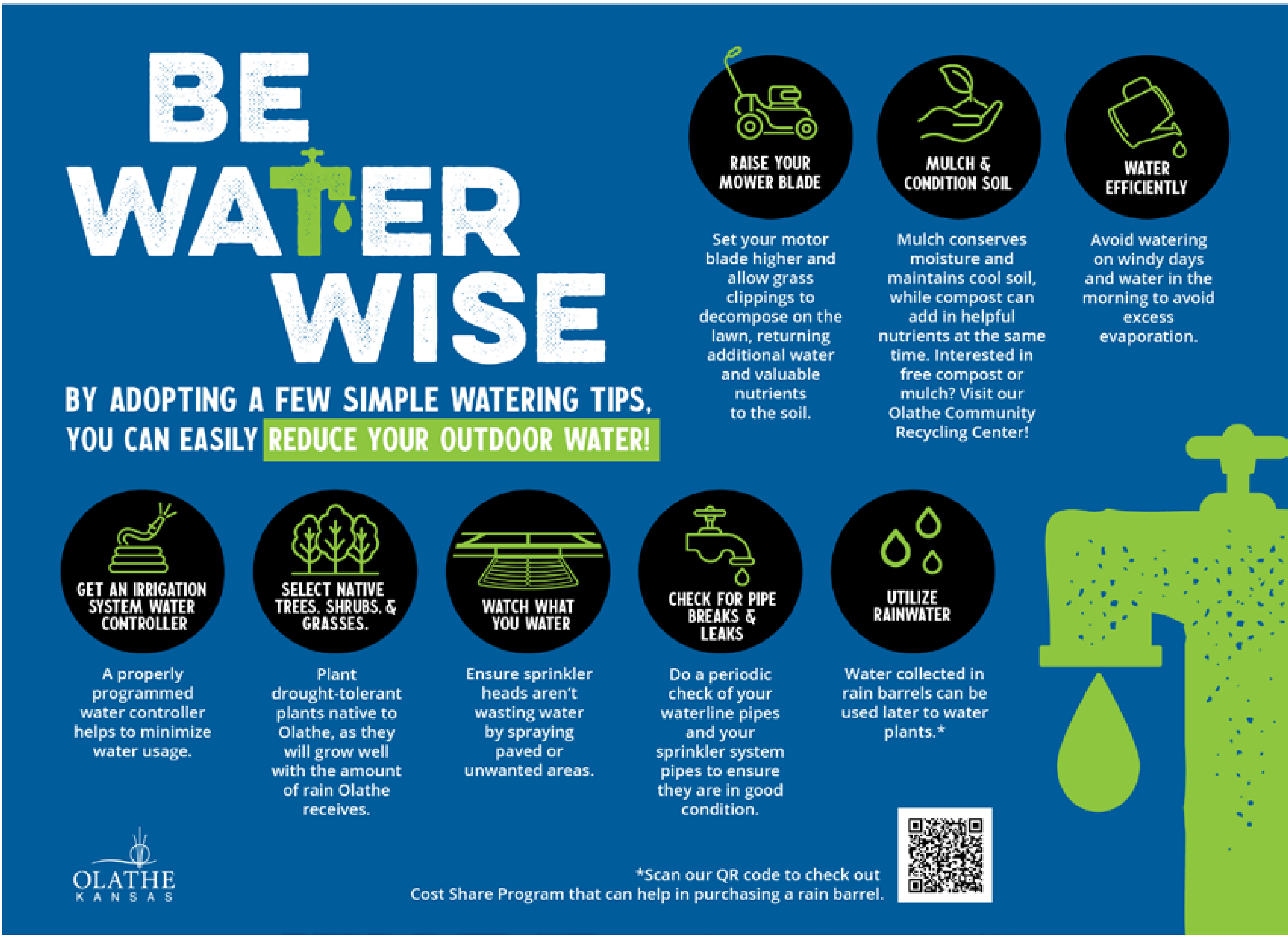
	2022 Olathe Average	KC Region Average	National Average
Taste of Water	82%	73%	60%
Overall Quality of Water Service	85%	73%	54%

Unregulated Contaminant Monitoring Rule (UCMR)

Every five years, the U.S. Environmental Protection Agency (EPA) implements the Unregulated Contaminant Monitoring Rule (UCMR). The purpose of the UCMR is to collect data from across the country on contaminants that may be present in drinking water. EPA uses this data to decide if the contaminants occur at frequencies and concentrations high enough to be regulated in the future.

To meet the requirements of the 5th cycle of UCMR testing (UCMR 5), quarterly samples will be collected at the entry to the water distribution system and then analyzed for 29 per- and poly fluoroalkyl substances (PFAS) and lithium. UCMR 5 data will be included in the 2024 Olathe Water Quality Report.

Below: City of Olathe crew member performing a new water main tap installation during a service line replacement. This work is in conjunction with the new Lead and Copper Rule.



WATER QUALITY DATA

The following tables list all the drinking water contaminants which were detected during the 2022 calendar year. Unless noted, the data presented in this table is from testing done January 1-December 31, 2022.

The EPA requires monitoring for over 100 drinking water contaminants every year and listed on the following page are those that were detected in your water.

The state requires us to monitor for certain contaminants less than once per year because concentrations of these contaminates are not expected to vary significantly from year to year. So, although some of the data is more than a year old, it is representative of the quality of your water.

TERMS & ABBREVIATIONS

Action Level (AL): the concentration of a contaminant that, if exceeded, triggers treatment or other requirements.

Level 1 Assessment: A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our system.

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

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

Maximum Contaminant Level (MCL): the "Maximum Allowed" MCL is 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.

Maximum Residual Disinfectant Level (MRDL): 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.

Monitoring Period Average (MPA): An average of sample results obtained during a defined time frame, common examples of monitoring periods are monthly, quarterly and yearly.

Nephelometric Turbidity Unit (NTU): a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person. Turbidity is not regulated for groundwater systems.

Non-Detects (ND): lab analysis indicates that the contaminant is not present.

Parts per Billion (ppb) or micrograms per liter (µg/l)

Parts per Million (ppm) or milligrams per liter (mg/l)

Running Annual Average (RAA): an average of sample results obtained over the most current 12 months and used to determine compliance with MCLs.

Secondary Maximum Contaminant Level (SMCL): recommended level for a contaminant that is not regulated and has no MCL.

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

WATER QUALITY DATA CONT...

Microbiological	Result	MCL	MCLG	Typical Source
COLIFORM (TCR)	In the month of September, 5.73% of samples returned as positive	Treatment Technique Trigger	0	Naturally present in the environment

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments. During the past year we were required to conduct one Level 1 assessment. The Level 1 assessment was completed, and we found that the meter pit used for sampling was a source of contamination. We were required to take corrective action and we completed this action by relocating the meter pit and updating the procedures for disinfecting sampling equipment and meter pits.

Regulated Contaminants	Collection Date	Highest Value	Range (low/high)	Unit	MCL	MCLG	Typical Source
BARIUM	4/26/2022	0.071	0.071	ppm	2	2	Discharge from metal refineries
CHROMIUM	4/26/2022	2	2	ppb	100	100	Discharge from steel and pulp mills
FLUORIDE	2/22/2022	0.77	0.682 - 0.77	ppm	4	4	Natural deposits; Water additive which promotes strong teeth.
NITRATE-NITRITE	5/27/2021	0.62	0.55 - 0.62	ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
SELENIUM	4/26/2022	1.9	1.9	ppb	50	50	Erosion of natural deposits

Disinfection Byproducts	Monitoring Period	Highest RAA	Range (low/high)	Unit	MCL	MCLG	Typical Source
TOTAL HALOACETIC ACIDS (HAA5)	2022	17	9.2 - 31.9	ppb	60	0	By-product of drinking water disinfection
TTHM	2022	50	30.8 - 49	ppb	80	0	By-product of drinking water chlorination

Lead and Copper	Monitoring Period	90th Percentile	Range (low/high)	Unit	AL	Sites Over AL	Typical Source
COPPER, FREE	2018 - 2020	0.0407	0.021 - 1.1	ppm	1.3	0	Corrosion of household plumbing
LEAD	2018 - 2020	2.2		ppb	15	0	Corrosion of household 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. Your water system is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. We have no indication that lead is a concern in the Olathe service area. 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 http://www.epa.gov/safewater/lead.

Chlorine/Chloramines Maximum Disinfection Level	MPA	MPA Units	RAA	RAA Units
2022 - 2022	3.0000	MG/L	2.7	MG/L

Total Organic Carbon Lowest Month for Removal	Number of Samples	Actual Removal Ratio	Required Removal Ratio	Lowest Monthly Removal Ratio
11/1/2022-11/30/2022	12	2.25	1.0 RATIO	1.49

Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.

WATER QUALITY DATA CONT...

Secondary Contaminants*	Collection Date	Highest Value	Range (low/high)	Unit	SMCL
ALKALINITY, TOTAL	4/26/2022	110	110	MG/L	300
CALCIUM	4/26/2022	52	52	MG/L	200
CHLORIDE	4/26/2022	95	95	MG/L	250
CONDUCTIVITY @ 25 C UMHOS/CM	4/26/2022	690	690	UMHO/CM	1500
CORROSIVITY	5/11/2021	0.84	0.84	LANG	0
HARDNESS, TOTAL (AS CACO3)	4/26/2022	180	180	MG/L	400
MAGNESIUM	4/26/2022	13	13	MG/L	150
NICKEL	4/26/2022	0.0031	0.0031	MG/L	0.1
PH	4/26/2022	8.7	8.7	PH	8.5
PHOSPHORUS, TOTAL	4/26/2022	0.098	0.098	MG/L	5
POTASSIUM	4/26/2022	7.8	7.8	MG/L	100
SILICA	4/26/2022	12	12	MG/L	50
SODIUM	4/26/2022	71	71	MG/L	100
SULFATE	4/26/2022	100	100	MG/L	250
TDS	4/26/2022	470	470	MG/L	500
ZINC	4/26/2022	0.015	0.015	MG/L	5

*** Non-Health Based Contaminants - No Federal Maximum Contaminant Level (MCL) Established.**

Phase 2 Underway on New Vertical Well Construction

The City of Olathe maintains a system of horizontal collector and vertical wells which draw water from the Kansas River for treatment. In 2018, the City began a program to replace the eight existing vertical wells, the oldest and most hydraulically degraded of all of the City's water sources, with eleven new vertical wells.

The City partnered with Burns & McDonnell for engineering design and Crossland Heavy Contractors for construction on Phase 1 of the project. This phase started construction in 2021 and included five new vertical wells along with an emergency backup power source for the entire eastern well field to ensure continued water production in the event of a power outage.

At the beginning of 2023, design began on Phase 2 with construction expected to follow later this year. This phase plans to include the installation of three more vertical wells.

The third and final phase is currently slated for design and construction in 2026 and will include the final three vertical wells. Once complete, the eleven new vertical wells will account for 23% of the City's reliable raw water supply.

Main Breaks in 2022 Presented Staff with a Challenging Year

In 2022, the City of Olathe experienced 152 water main breaks, 52 of which occurred in a two-month period. This high volume in a brief period is unusual. Extremely dry, cold weather prompted the breaks, due to shifts in soil that impact pipes and break them.

Making these repairs under normal conditions is challenging enough, but Olathe's Utility Maintenance staff completed the work with 10 out of 38 front line staff, employed with the City of Olathe for five months or less. Repairs were also made without the assistance of five open staff positions.

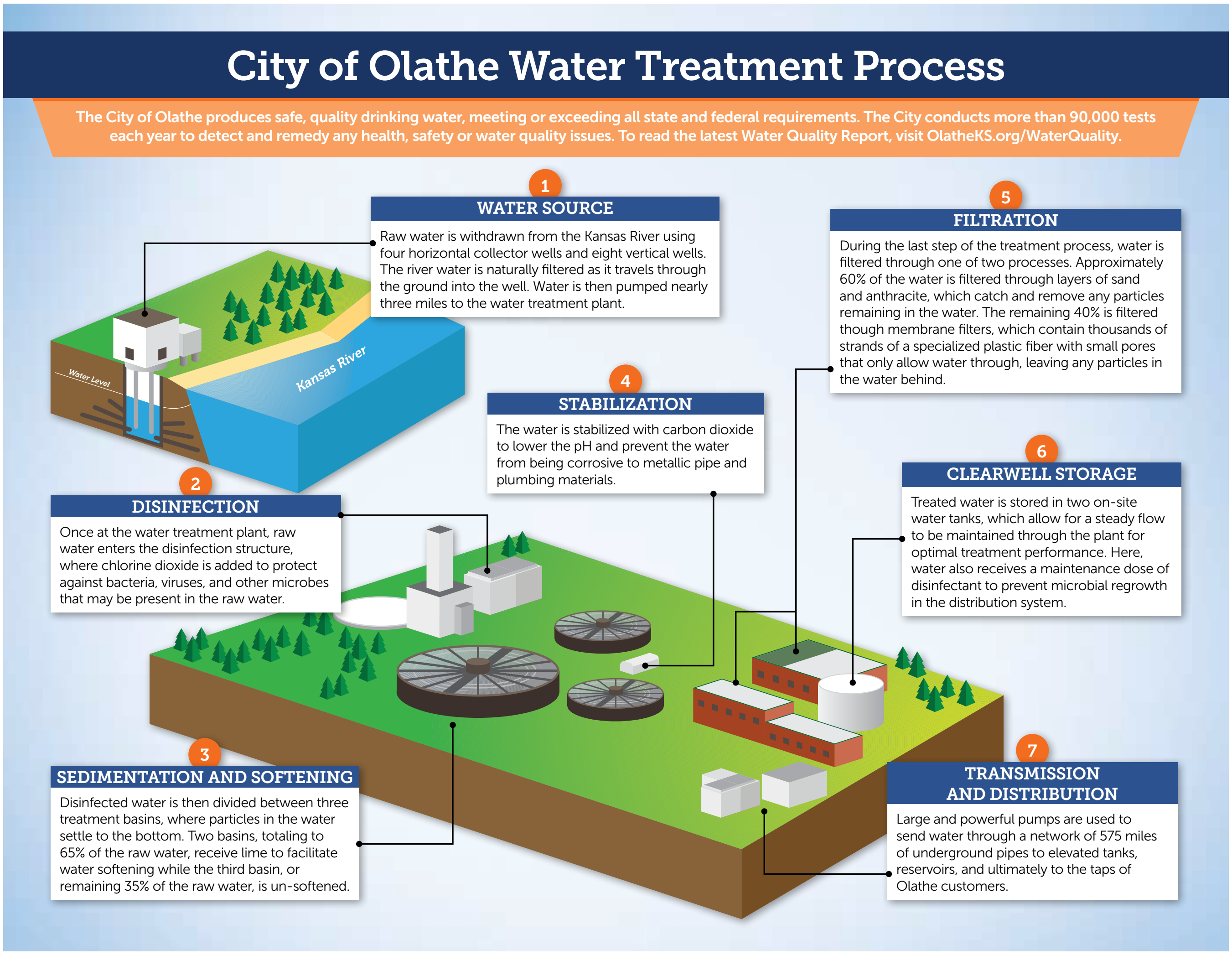
As if they didn't have enough on their plates, on Oct. 15 staff members responded to a damaged sewer force main and prevented sewage from flowing into Cedar Creek's Lake. The Water Distribution and Wastewater Collection teams are cross trained to perform water or sewer maintenance, and at one time or another have fixed a water main break. The teams have proven repeatedly that when it comes to being exceptional, they set the bar.

Demolition of Water Treatment Plant #1 – End of an Era, Sign of Growth

Water Treatment Plant #1, located at 600 S. Curtis Street, was demolished in the fall of 2022. This water treatment plant was built in 1950, and as years passed and Olathe's population continued to swell - so did the demand for more water. This led to simply outgrowing the facility. With four rapid sand filters, each capable of filtering .67 MGD (Million Gallons per Day), this combined for 2.0 MGD of total treated water.

For reference, Olathe's average daily water usage is currently 13-19 million MGD.
In 1968, Water Plant #2 was constructed to provide 4 MGD of treated water with room to grow. This facility can currently produce 32 MGD.

The demolition of this former treatment facility is a testament to Olathe's growth. It marks the end of an era, but the City's proactive thinking in looking ahead has ensured we have newer facilities with higher capacities to take us well into the future.



The EPA operates the Safe Drinking Water Hotline, providing the general public with information about drinking water and groundwater programs authorized under the Safe Drinking Water Act. Call the hotline at 1-800-426-4791.

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