

# SUGAR LAND 2018 WATER QUALITY REPORT



## CITY OF SUGAR LAND Public Works

- Main System - PWS 0790005
- RiverPark System - PWS 0790354
- Greatwood System - PWS 0790296
- New Territory System - PWS 0790253

*The City of Sugar Land Public Works Water Utilities Division takes pride in maintaining a tradition of producing superior quality water, vigilantly maintaining water and wastewater infrastructure and providing responsive and efficient customer-oriented service in a cost-effective and innovative manner, emphasizing responsible environmental stewardship and compliance with all regulatory requirements.*

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Este reporte incluye informacion importante sobre el agua para tomar.  
 Para asistencia en español, favor de llamar al telefono **281-275-2450** o **311**.

# SUGAR LAND Best Tasting Water in the United States WATER



The City of Sugar Land's water was selected as the second Best Tasting Water in the North America on June 11, 2019, at the American Water Works Association's (AWWA) Annual Conference and Exposition (ACE19). The City of Sugar Land competed against twenty-eight water samples from across the country who won their state contest. The City missed winning the best tasting water in North America by the narrowest of margins as it took three rounds of judging to break a tie between the top two positions. In the end, the Canadian town of Blue Mountain Ontario won best tasting in North America. The town of The Blue Mountains is a small water front town in the Georgian Bay of Lake Huron and is a member of the Ontario AWWA section. The raw water quality is much clearer and has far fewer particulate matter than the Sugar Land raw water source (Brazos River via Oyster Creek). Since the top honor went to a town in Ontario, Canada, this makes the City of Sugar Land best in the United States.

The City was selected to represent the State of Texas at the national contest after winning the 2019 Best Tasting Water in Texas award on April 4, 2019. The Texas Section of the American Water Works Association (TAWWA) presented the City of Sugar Land with this award after a blind taste competition at the annual Texas Water Conference.

The American Water Works Association (AWWA) is the leading authority for water utilities in the United States. The Texas Section of AWWA (TAWWA) assists water professionals throughout Texas in protecting public health and water resources by promoting advancements in science, technology, education and management. Governmental

policies are influenced by leveraging the expertise and collective leadership of over 50,000 members. AWWA believes it is important for the public to rely on their local water utility to provide safe and clean water to protect public health.

Texas Water and ACE offer educational seminars, technology reviews, and the opportunity for fiercely friendly competition between water professionals. One of the highlights of AWWA conferences is the Best Tasting Water competition. Cities enter samples of their drinking water in hopes of earning bragging rights as the best tasting water in their state. Winners of state awards then enter the national AWWA completion. Judging is done by a panel of judges through blind taste tests. This was Sugar Land's first year to enter the contest at Texas Water and ACE.

The samples entered in both contests were taken from sites in the middle of our service area and is representative of the water we deliver to our customers every day. These awards highlight years of investment in maintaining our infrastructure and the efforts of both past and current city staff, including the engineers who design the water plants and distribution mains, the water plant operators who produce the highest quality water possible, the water distribution crews who maintain the system, and the water quality technicians who constantly monitor and perform testing to stay within the stringent goals set by the City, TCEQ, and the EPA.

We are very proud to produce and deliver good tasting, high quality water and delighted to have it recognized by our peers as the Best Tasting Water in Texas and the United States!



# DIRECTOR'S MESSAGE

## A MESSAGE TO INDIVIDUALS WITH A COMPROMISED IMMUNE SYSTEM FROM THE EPA

You may be more vulnerable than the general population to certain microbial contaminants, such as *Cryptosporidium*, in drinking water. Infants; some elderly or immunocompromised persons, such as those undergoing chemotherapy for cancer; those who have undergone organ transplants; those who are undergoing treatment with steroids; and people with HIV/AIDS or other immune system disorders can be particularly at risk from infections. You should seek advice about drinking water from your physician or health care provider. Additional guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Safe Drinking Water Hotline at 800-426-4791.



On behalf of the City of Sugar Land's water professionals, I proudly present the 2018 Water Quality Report. I am pleased to report the water supplied by the City consistently meets all health-based drinking water criteria as well as primary and aesthetic standards and is well below any maximum contaminant level (MCL) set by the U.S. Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ). Our water quality team takes daily samples from many locations throughout the City's four water production and distribution systems. Samples are tested for chemical, bacteriological and other possible contaminants. Results and information on drinking water quality standards are provided in this report.

Sugar Land's team of licensed water operators and trained water professionals are committed to delivering clean, safe, drinkable water to every home and business in our community. The annexation of Greatwood and New Territory in December 2017 added two independent water systems and 9,274 accounts to the city's water operations. Staff welcomed our new customers and commenced providing customer service and system operation the Sugar Land Way.

Calendar year 2018 was a productive year for water planning. The City made significant progress on an Integrated Water Resource Plan (IWRP) project to take Sugar Land's water supply planning beyond the traditional approach of cost/yield analysis and incorporate social and environmental aspects of water resource management. The IWRP, completed in March 2019, recommended policies, programs and capital improvement projects to ensure sufficient water supplies, and facilitate the city's compliance with Fort Bend Subsidence District's 2025 regulatory requirement to limit groundwater use to 60% of total water demand. The Plan's recommendations, including expansion of the Surface Water Treatment Plant, can be found at [www.SugarLandTX.gov/IWRP](http://www.SugarLandTX.gov/IWRP).

Experienced staff, aggressive water quality monitoring, preventative maintenance protocols, prompt leak repairs, and swift response to customer concerns are core principals of our daily operation. These programs, coupled with a robust capital improvement program that plans for timely rehabilitation projects and new infrastructure construction, are evidence of a well maintained, superior water system. Annual investments in water and wastewater system improvements is the Sugar Land Way and assures we have adequate water infrastructure in place to provide safe drinking water 24 hours-a-day, seven days-a-week.

We value the trust and confidence you have in us, your water provider, and renew our commitment to maintain high drinking water and operational standards. Contact us through the City's call center, "311" or 281-275-2450; we want to address all water related questions or concerns you may have.

A handwritten signature in black ink, appearing to read 'R. Valenzuela', written over a white background.

Robert Valenzuela, P.E., CFM  
Director of Public Works



## WHAT IS A WATER QUALITY REPORT?

A Water Quality Report, also known as a Consumer Confidence Report (CCR), is an annual report that presents the water quality of a city's drinking water. Water Quality Reports are required by the EPA and the TCEQ. The report summarizes data collected on drinking water during a calendar year. Water samples are taken daily and tested for chemical, bacteriological and disinfectant residual contaminants. The samples are taken from various locations throughout the water plant's production and distribution system. The report also documents any monitoring or testing violations of drinking water standards set by the EPA and the TCEQ.



## SUGAR LAND'S WATER SOURCES

The City of Sugar Land operates four independent potable water systems. The Main System serves the 27,831 metered connections in the city limits east of the Brazos River, and the RiverPark System serves 1,380 metered connections in the RiverPark subdivision. Greatwood and New Territory are served by their own systems with 4,613 and 4,661 connections.

The City's Main System is supplied from both groundwater and surface water. Groundwater is supplied from 14 wells at six separate groundwater plants. These wells, with an average depth of greater than 1,200 feet, pump water from the Chicot and Evangeline aquifers. Surface water from the Brazos River through the Oyster Creek canal system supplies roughly 40 percent of the Main System's water demand. Raw surface water is treated at the City's Surface Water Treatment Plant then blended with groundwater at three groundwater plants before entering the distribution lines in the Main System.

The RiverPark System's two groundwater wells pull water from the Chicot and Evangeline aquifers. The groundwater is treated at the City's RiverPark groundwater plant and then distributed to customers. Greatwood and New Territory are supplied water from wells in the Chicot and Evangeline aquifers. Greatwood has four wells and two groundwater plants, and New Territory has three wells and three groundwater plants.

## SOURCE WATER ASSESSMENT REPORTS

The TCEQ completed an assessment of Sugar Land's source water and results indicate that some sources are susceptible to certain contaminants. The sampling requirements for the City's water systems are based on this susceptibility and previous sample data. Any detection of these contaminants may be found in this Consumer Confidence Report. Source water assessments are available through the [Source Water Assessment Viewer](#) and [Drinking Water Watch](#). Call **281-275-2450** or **311** for more information on the City's source water protection efforts.

### OPPORTUNITIES FOR PUBLIC COMMENT ON WATER PLANNING AND WATER QUALITY

For more information about this report or participating in public meetings concerning the City of Sugar Land's drinking water, call **281-275-2450** or **311**.



## DISINFECTING SUGAR LAND'S WATER

The City of Sugar Land takes every precaution to ensure Sugar Land residents have safe, clean drinking water. Disinfectants protect the water against microbial contaminants as it travels through the many miles of pipes and pumps. Chlorine is added to the RiverPark, Greatwood and New Territory Systems, and chloramine is added to the Main System.

## POSSIBLE CONTAMINANTS

Contaminants may be found in drinking water that may cause taste, color or odor problems. These types of problems are not necessarily causes for health concerns. These constituents are called secondary constituents and are regulated by the State of Texas, not the EPA. Secondary constituents are not cause for health concern, but they may affect the appearance and taste of your water. Drinking water (both tap and bottled water) comes from rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over land or through the ground, it may pick up naturally occurring minerals, substances from animals or humans and even radioactive material.

Contaminants that may be present in drinking 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 might have 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; and
- radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

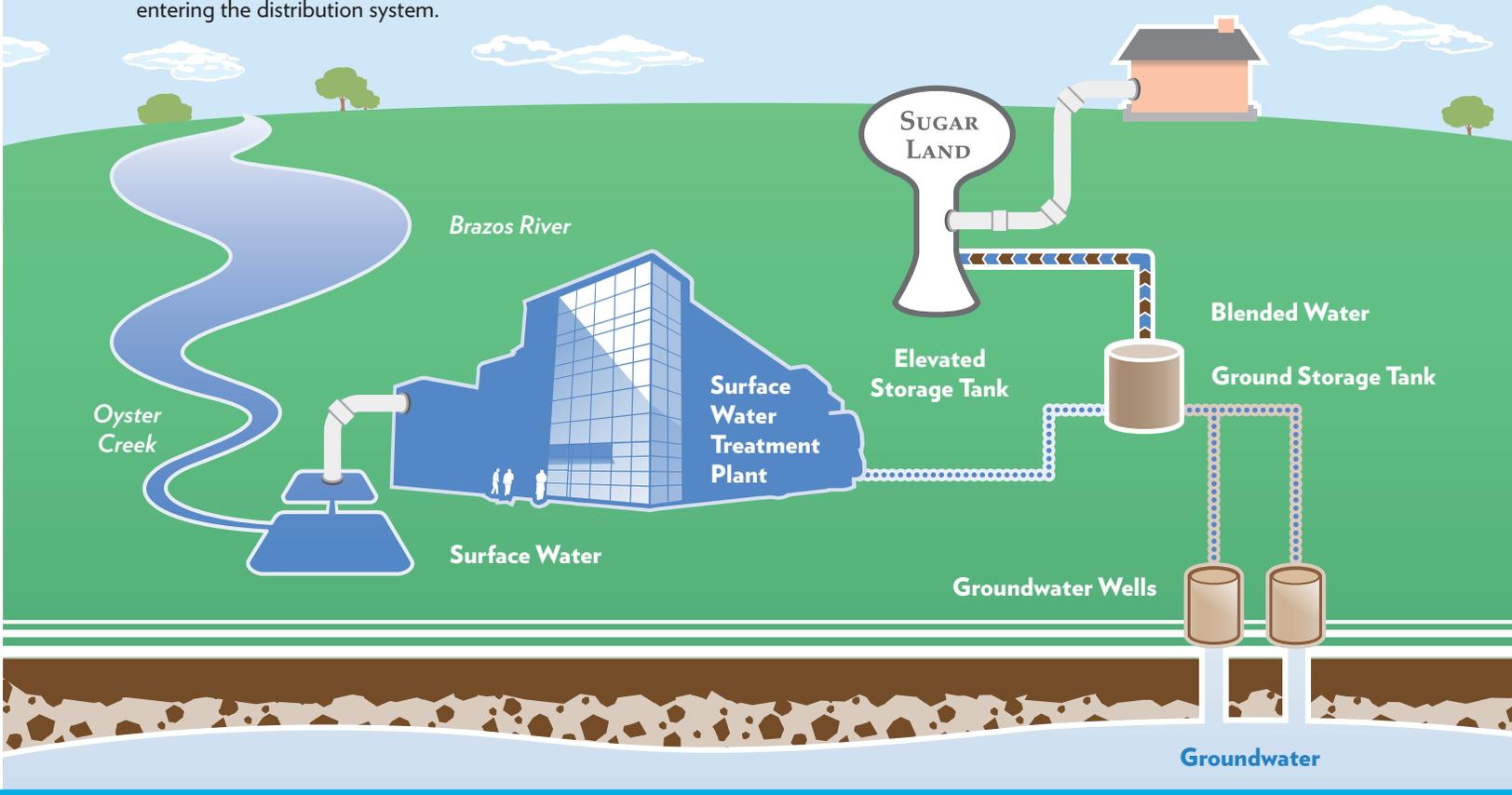
## LEAD LEVEL CONCERNS

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 City of Sugar Land is 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 two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may want 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 on the [EPA's website](#).

## MAIN SYSTEM OVERVIEW

In the Main System, treated surface water that comes from the Surface Water Treatment Plant is blended with groundwater before entering the distribution system.



## CRYPTOSPORIDIUM AND GIARDIA

*Cryptosporidium* and *Giardia* are waterborne, pathogenic organisms. They can be passed into the environment through urban runoff or a sewage leak. Exposure to these organisms can lead to symptoms such as diarrhea, abdominal discomfort, fever, weight loss, malabsorption and anemia. Although not life-threatening to healthy adults, *Cryptosporidium* and *Giardia* can be fatal to infants, the elderly, pregnant women and people with a compromised immune system. (See the message from the EPA on page 2 if you may be at risk.)

## PRODUCTION AND DISTRIBUTION PROFILE

Two sources supply the City's Main System: surface water from Oyster Creek and the Brazos River treated at the City's Surface Water Treatment Plant and groundwater wells. The RiverPark, Greatwood and New Territory systems retrieve water from groundwater wells and treat it in one of the City's groundwater plants. Even though Sugar Land's water is excellent quality, chlorine is added to the RiverPark, Greatwood and New Territory systems, and chloramine is added to the Main System to protect the finished water against microbial contaminants as it travels through the many miles of pipes and pumps before being delivered to customers. Fluoride is added to the Main and RiverPark systems to help prevent tooth decay. Corrosion inhibitors may also be added to reduce corrosion of metal components in the private plumbing systems in homes and buildings.

After the water has been treated to meet federal and state standards, the water is delivered to homes and businesses. The City of Sugar Land is committed to providing high quality water. If you have any questions regarding the data in this report, contact the **Public Works Department** at **281-275-2450** or **311**.



## INTEGRATED WATER RESOURCE PLAN

In 2016, the City of Sugar Land (city) began the process of developing an Integrated Water Resource Plan (IWRP) to proactively plan for future water needs. The IWRP examined the city's available water supplies and infrastructure and developed a clear, strategic, and cost-effective road map that allows the city to meet future water demands and water quality requirements. This includes meeting groundwater regulations by the Fort Bend Subsidence District (FBSD), while also ensuring reliable and equitable water access in the 55-square-mile area that includes the city limits and the city's extra-territorial jurisdiction (ETJ).

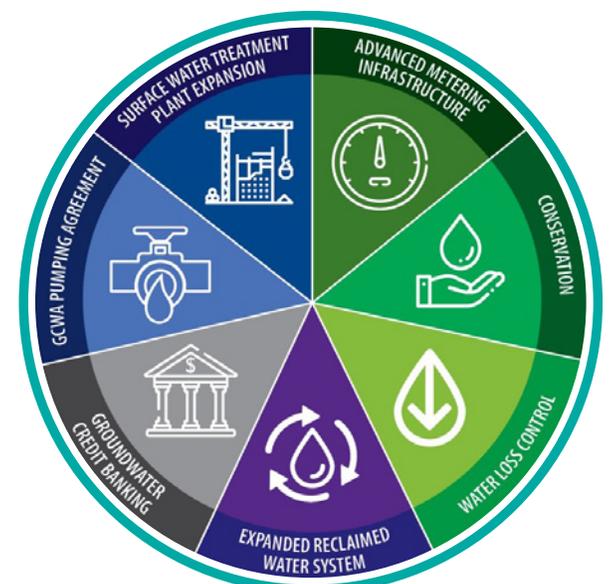
The project team, which included a 14-member citizen task force, a City Council Task Force, and city staff considered numerous questions that the project needed to answer and their ideals for the community when developing the plan's seven objectives: 1) provide reliable water supply, 2) develop cost-effective solutions, 3) promote system efficiency, 4) optimize water resources, 5) maintain quality of life, 6) protect the environment, and 7) promote equity. The plan's tasking included compiling an understanding of the community's needs, concerns, and priorities; performing an in-depth analysis of the current water system, regulatory requirements and community objectives; and analyzing existing and future water supply gaps and options.

The results of this in-depth process is a comprehensive, holistic path to achieving the city's objectives while complying with FBSD regulations. The diversified policy recommendations, management tools, and capital improvement projects identified to best meet these objectives include:

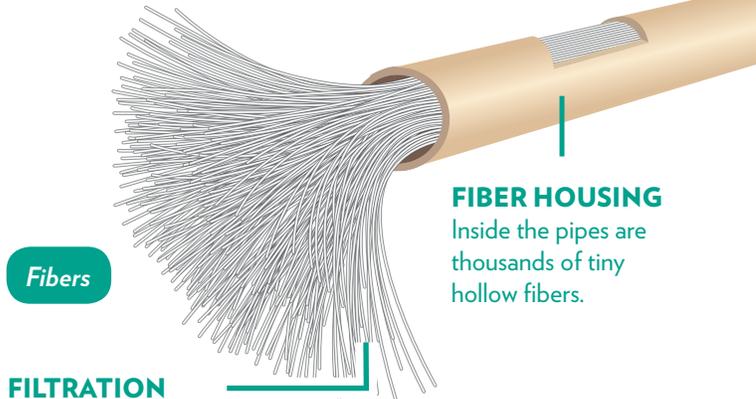
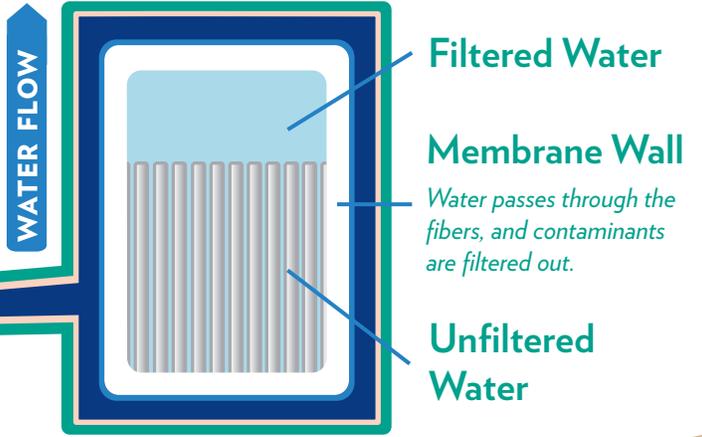
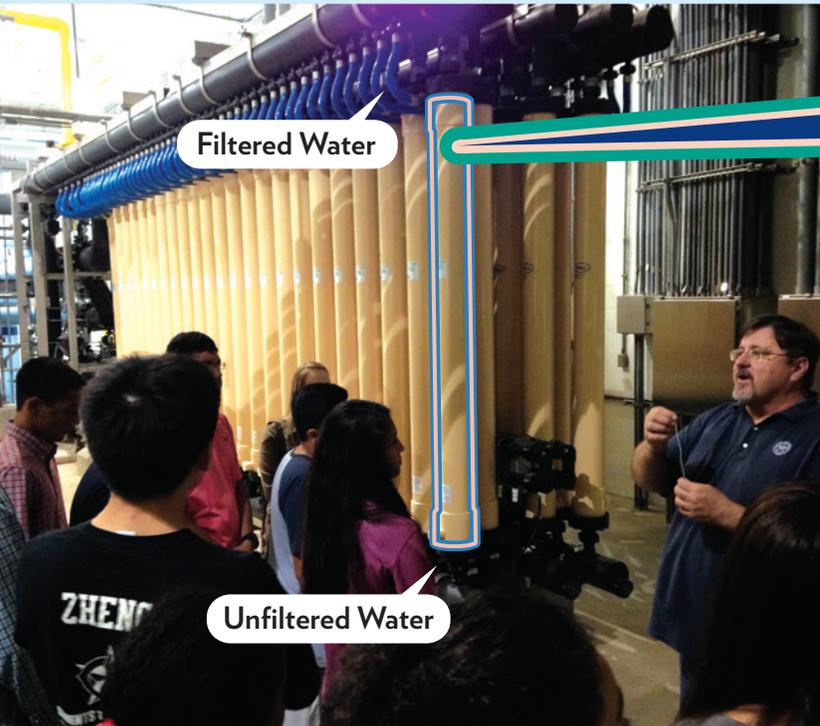
- Access to Brazos River Water
- Advanced Metering Infrastructure (AMI)
- Conservation (Basic)
- Detailed Rate Study
- Groundwater Credit Banking
- Reclaimed from North Wastewater Treatment Plant for Non-Potable use
- Reclaimed from South Wastewater Treatment Plant for Non-Potable use (increased)
- SWTP Expansion & Transmission System Improvements
- Water Loss Control

The IWRP recommends phased execution: near-term (2019 – 2025), medium-term (2026 – 2030), and long-term (2031 – 2040). The rate study scheduled for completion in 2020 will identify capitalization of these projects, provide an understanding of associated rate impacts, and establish final phasing to comply with FBSD's 2025 increase in groundwater restrictions and accomplish the city's water management goals. Additional details on each recommended option can be found in the IWRP Executive Summary. The in-depth analysis of the City of Sugar Land's water supplies and the recommended approaches to water management positions the city and its citizens to confidently confront the city's future water needs. The IWRP was approved by the City Council on March 19, 2019 as the adopted plan for water supply management and regulatory compliance for the City.

For more information about the project and the recommendations, please visit the City's [IWRP website](#).



# SURFACE WATER FILTRATION PROCESS



**FILTRATION**

The hollow fibers absorb water, but particles that are larger than 0.1 micron cannot pass through the pores. Bacteria, parasites, sand, silt, clay and other contaminants that are too big to pass through are filtered out.

## Potable Water Production and Distribution Profile

2018	Main System	RiverPark System	New Territory System	Greatwood System
<b>Population</b>	85,207	3,586	16,572	12,504
<b>Groundwater Source</b>	Chicot Aquifer and Evangeline Aquifer			
<b>Surface Water Source (Main System)</b>	Brazos River & Oyster Creek			
<b>Annual Demands (million gallons)</b>	5,718	235	780	721
<b>System Capacity (million gallons/day)</b>	62	3.4	11	9.2
<b>Daily Average Demands (million gallons)</b>	15.7	0.6	2.1	2.0
<b>Daily Average Demand per Capita (gallons)</b>	183	176	128	158
<b>Number of Groundwater Wells</b>	14	2	3	4
<b>Average Well Depth (feet)</b>	1,250	1,342	1,000	1,600
<b>Well Production Capacity (million gallons/day)</b>	51.6	3.4	11.1	9.2
<b>Surface Water Plant Capacity (million gallons/day)</b>	10.85			
<b>Ground Storage (# of Tanks)</b>	15	2	6	2
<b>Ground Storage Tank Capacity (million gallons)</b>	15.2	0.7	2.25	1.00
<b>Elevated Storage Tanks (million gallons)</b>	5			
<b>Elevated Storage Tank Capacity (million gallons)</b>	6			
<b>Miles of Distribution Line</b>	435	20	57	59
<b>Number of Water Meters</b>	27,831	1,380	4,661	4,613

# WATER QUALITY DATA

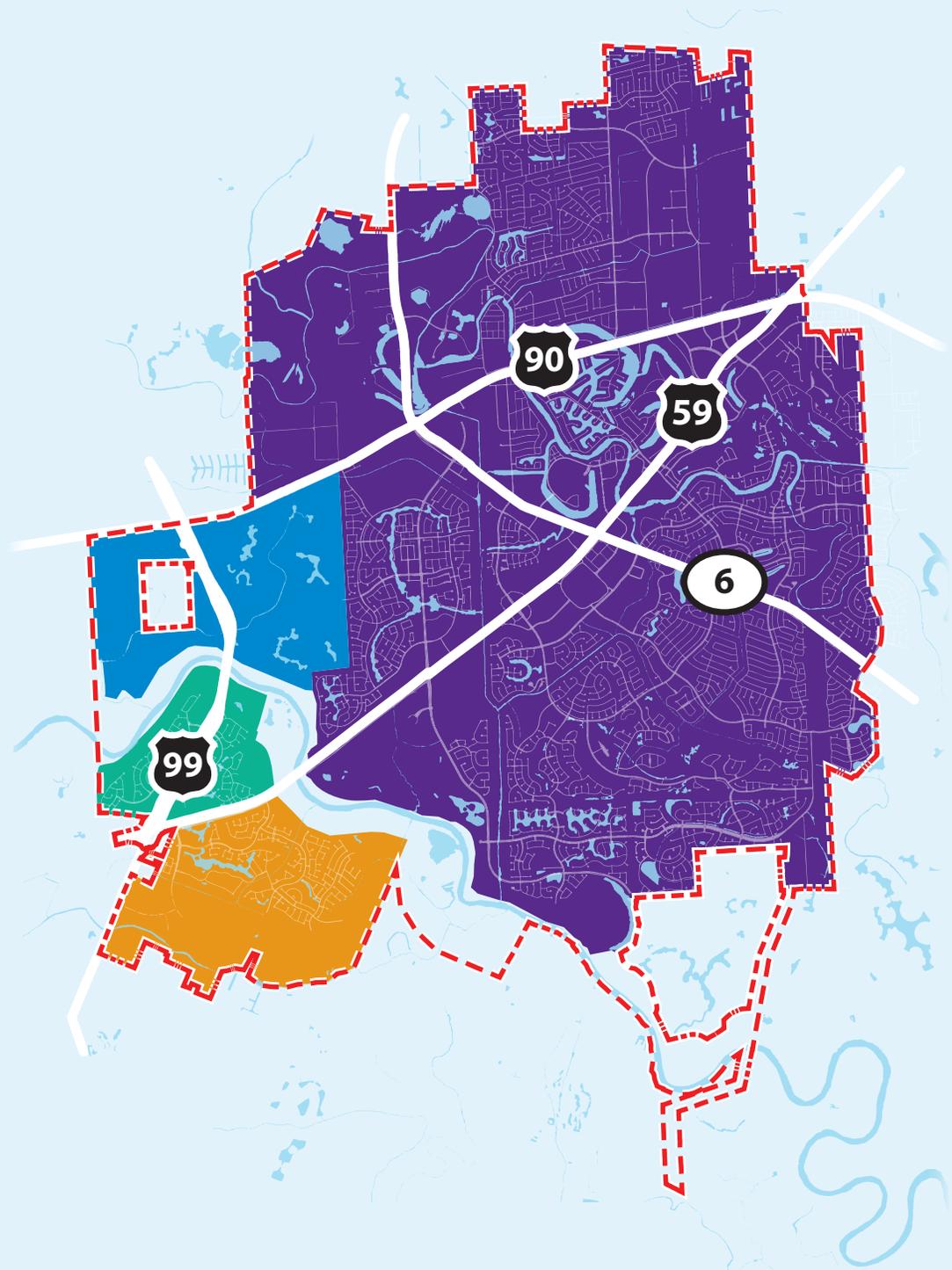


The TCEQ's mission is to protect the public's health and Texas' natural resources. Like the TCEQ, the City's goal is to have clean air and water and to safely dispose of waste. The TCEQ monitors Sugar Land's water by collecting and analyzing water samples for metals, minerals, volatile and semi-volatile organic compounds, disinfectant byproduct compounds and radiological compounds. In addition to the tests that the TCEQ performs, the agency requires that the City of Sugar Land do testing in-house.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration 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 contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's **Safe Drinking Water Hotline** at **800-426-4791**.

## SUGAR LAND'S PUBLIC WATER SYSTEMS

The City of Sugar Land operates four independent public water systems (PWS) within the corporate limits of the city. The Main System (PWS 0790005) serves the City east of the Brazos River and the RiverPark System (PWS 0790354) serves the subdivision west of the Brazos River. Greatwood (PWS 0790296) and New Territory (PWS 0790253) Systems serve the Greatwood & New Territory neighborhoods. The four systems are not connected; therefore, water quality data for each system is presented separately in this report.





## DEFINITIONS

The following tables contain scientific terms and measures, some of which may require explanation.

### **ACTION LEVEL (AL)**

The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

### **AVERAGE LEVEL OF QUARTERLY DATA (AVG)**

Regulatory compliance with some Maximum Contaminant Levels are based on running annual average of monthly samples.

### **CONSTITUENT**

Federally regulated or monitored analyte.

### **INORGANIC CONTAMINANTS**

Salts and metals which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

### **LEVEL 1 ASSESSMENT**

A study of the water system to identify potential problems and determine, if possible, why total coliform bacteria were found.

### **LEVEL 2 ASSESSMENT**

A very detailed study of the water system to identify potential problems and determine, if possible, why an Escherichia coli (E. coli) maximum contaminant level (MCL) violation has occurred and/or why total coliform bacteria were found on multiple occasions.

### **MAXIMUM CONTAMINANT LEVEL (MCL)**

The highest permissible level of a contaminant in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

### **MAXIMUM CONTAMINANT LEVEL GOAL (MCLG)**

The level of a contaminant in drinking water below which there is no known or expected health risk. MCLGs allow for a margin of safety.

### **MAXIMUM RESIDUAL DISINFECTANT LEVEL (MRDL)**

The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminant.

### **MAXIMUM RESIDUAL DISINFECTANT LEVEL GOAL (MRDLG)**

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 contamination.

### **MICROBIAL CONTAMINANTS**

Viruses and bacteria which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

### **ORGANIC CHEMICAL CONTAMINANTS**

Synthetic and volatile organic chemicals which are by-products of industrial processes and petroleum production; can also come from gas stations, urban storm water runoff and septic systems.

### **PESTICIDES AND HERBICIDES**

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

### **RADIOACTIVE CONTAMINANTS**

Naturally occurring or the result of oil and gas production and mining activities.

### **TREATMENT TECHNIQUE (TT)**

A required process intended to reduce the level of a contaminant in drinking water.

### **TTHM**

Total Trihalomethanes

### **TURBIDITY**

A measurement of the cloudiness of the water caused by suspended particles. We monitor it because it is a good indicator of water quality and the effectiveness of our filtration.



# IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

## MAIN SYSTEM AND GREATWOOD SYSTEM

### UNREGULATED CONTAMINANTS MONITORING DATA AVAILABLE

The City of Sugar Land’s Main System and Greatwood System participated in gathering data under the EPA’s Fourth Unregulated Contaminant Monitoring Rule (UCMR4). Unregulated contaminants are those that don’t yet have a drinking water standard set by EPA. The purpose of monitoring for these contaminants is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. For additional information, visit [EPA’s website](#) or call the **Safe Drinking Water Hotline** at **(800) 426-4791**.

As our customers, you have a right to know that these data are available. UCMR results and occurrence data can be viewed by the public at [EPA’s website](#).

The Main System will be participating in UCMR4 monitoring from 2018 to 2020. Water samples collected for UCMR4 monitoring for the Main System in 2018 were found to be non-detect. Sampling for additional contaminants will resume in 2020.

The Greatwood System completed its UCMR4 monitoring requirements in 2018. Results for unregulated contaminants detected in the Greatwood System are presented in the table below. For questions regarding the systems’ monitoring or results, contact Ashley Kirkpatrick, Laboratory Manager at **281-275-2450** or **311**.

UCMR4 RESULTS FOR GREATWOOD SYSTEM - 0790296						
Contaminant	Year	Average Level Detected	Minimum Level Detected	Maximum Level Detected	Unit of Measure	Likely Source of Contamination
Manganese	2018	5.8	1.4	8.6	ppb	Naturally-occurring element.
Germanium	2018	0.28	0	0.71	ppb	Naturally-occurring element.
Bromide	2018	182	85	300	ppb	Naturally-occurring; HAA Indicator
HAA6BR	2018	0.11	0	0.32	ppb	By-product of drinking water disinfection.
HAA9	2018	0.11	0	0.32	ppb	By-product of drinking water disinfection.



## WATER QUALITY DATA TABLES

An important component of water treatment and distribution is compliance with the many state and federal laws and regulations that govern public water systems. The City's groundwater treatment plants and the SWTP are monitored daily, and monthly reports are submitted to the TCEQ. The data presented in this report is from the most recent testing done in accordance with the regulations. The EPA and the State of Texas require the City of Sugar Land to monitor for certain contaminants less than once per year because the concentrations do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. Unless otherwise noted, the data presented in this report is from testing done in 2018.

### ABBREVIATIONS

<b>N/A:</b> Not Applicable	<b>pCi/L:</b> pico Curies per Liter; measure of radioactivity
<b>ND:</b> None Detected	<b>ppm:</b> parts per million or milligrams per liter (mg/L)
<b>NTU:</b> Nephelometric Turbidity Units (a measure of turbidity)	<b>ppb:</b> parts per billion, or micrograms per liter (µg/L)

## MAIN SYSTEM - 0790005

### Bacteria

Contaminant	Year	MCLG	Total Coliform MCL	Highest # of Positive	Fecal Coliform or E Coli MCL	Total # of Positive E Coli or Fecal Coliform Samples	Violation (Yes/No)	Likely Source of Contamination
<b>Coliform Bacteria</b>	2018	0	TT	1	Routine and repeat samples are total coliform-positive and either is E. coli-positive	0	No	Naturally present in the environment.

### Copper and Lead

Contaminant	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation (Yes/No)	Likely Source of Contamination
<b>Copper</b>	2017	1.3	1.3	0.2567	0	ppm	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
<b>Lead</b>	2017	0	15	4.9	0	ppb	No	Corrosion of household plumbing systems; Erosion of natural deposits.

### Radioactive Contaminants

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Beta/photon emitters*</b>	2018	5.4	5.4	5.4	0	50*	pCi/L	No	Decay of natural and man-made deposits.
<b>Combined Radium 226/228</b>	2017	1.54	0	1.54	0	5	pCi/L	No	Erosion of natural deposits.

\* EPA considers 50 pCi/L to be the level of concern for beta particles.



Disinfectants and Disinfection By-Products

Contaminant	Year	Average Level of Quarterly Data	Lowest Result of a Single Sample	Highest Result of a Single Sample	MRDLG	MRDL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Chloramines (Chlorine Residual, Total)</b>	2018	2.81	0.7	3.86	4	4	ppm	No	Water additive used to control microbes.
<b>Chlorine Dioxide</b>	2018	44	0	270	800	800	ppb	No	Water additive used to control microbes.
Contaminant	Year	Highest Average Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Haloacetic acids (HAA5)</b>	2018	7.2	0.0	9.6	No Goal for the total	60	ppb	No	By-product of drinking water disinfection.
<b>TTHMs (Total trihalomethanes)</b>	2018	4.3	0.0	4.5	No Goal for the total	80	ppb	No	By-product of drinking water disinfection.
<b>Chlorite</b>	2018	0.59	0.0	0.59	0.8	1	ppm	No	By-product of drinking water disinfection.

Inorganic Contaminants

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Major Sources in Drinking Water
<b>Barium</b>	2018	0.12	0.108	0.12	2	2	ppm	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
<b>Cyanide</b>	2018	160	0	160	200	200	ppb	No	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories.
<b>Fluoride</b>	2018	0.2	0.17	0.2	4	4	ppm	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
<b>Nitrate (as Nitrogen)</b>	2018	2.07	0.01	2.07	10	10	ppm	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.



Volatile Organic Contaminants

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Xylenes</b>	2018	0.0009	0	0.0009	10	10	ppm	No	Discharge from petroleum factories; discharge from chemical factories

Synthetic Organic Contaminants including Pesticides and Herbicides

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Atrazine</b>	2018	0.39	0	0.39	3	3	ppb	No	Runoff from herbicide used on row crops.
<b>Simazine</b>	2018	0.14	0	0.14	4	4	ppb	No	Runoff from herbicide use.

Total Organic Carbon

*Total organic carbon has no adverse health effects. Total organic carbon provides a medium for the formation of disinfection byproducts when water is disinfected. Disinfection is necessary to ensure that water does not have unacceptable levels of pathogens. Byproducts of disinfection include trihalomethanes (THMs) and haloacetic acids (HAAs) which are reported on elsewhere in this report.*

Constituent	Average	Minimum	Maximum	MCLG	MCL	Unit of Measure	Likely Source of Contamination
<b>TOC- Source Water</b>	6.6	4.4	18.3	n/a	TT	ppm	Naturally present in the environment.
<b>TOC- Drinking Water</b>	2.9	1.5	4.1	n/a	TT	ppm	Naturally present in the environment.
<b>TOC % Removal</b>	49.9	26	86.3	n/a	TT	%	n/a



### Turbidity

Turbidity is a measurement of the cloudiness of the water caused by suspended particles. We monitor it because it is a good indicator of water quality and the effectiveness of our filtration.	Limit (Treatment Technique)	Level Detected	Violation	Likely Source of Contamination
<b>Highest single measurement</b>	<b>1.0 NTU</b>	0.08	N	Soil runoff
<b>Lowest monthly % meeting limit</b>	<b>0.3 NTU</b>	100%	N	Soil runoff

### Secondary Constituents and Other Non-Regulated Contaminants

Contaminant	Year	Average Level Detected	Minimum Level Detected	Maximum Level Detected	Unit of Measure	Secondary MCL
<b>Bromoform</b>	2018	0.1	0	1.0	ppb	no MCL
<b>Calcium</b>	2018	41.6	24.8	59.8	ppm	no MCL
<b>Chloride</b>	2018	55.3	33.1	127	ppm	250
<b>Chlorodibromomethane</b>	2018	0.2	0	1.1	ppb	no MCL
<b>Copper</b>	2018	0.0013	0	0.0026	ppm	1
<b>Fluoride</b>	2018	0.19	0.17	0.2	ppm	2
<b>Iron</b>	2018	21	0	135	ppb	300
<b>Magnesium</b>	2018	9.6	9.2	10.1	ppm	no MCL
<b>Manganese</b>	2018	4.6	0	55	ppb	50
<b>Nickel</b>	2018	1.85	1.8	1.9	ppb	100
<b>pH</b>	2018	8.0	7.1	8.6	units	> 7
<b>Potassium</b>	2018	5.5	5.2	5.8	ppm	no MCL
<b>Sodium</b>	2018	52.3	26.1	104	ppm	no MCL
<b>Sulfate</b>	2018	30.8	15.5	78.5	ppm	300
<b>Total Alkalinity</b>	2018	164	100	234	ppm	no MCL
<b>Total Dissolved Solids</b>	2018	321	184	516	ppm	1000
<b>Total Hardness as CaCO<sub>3</sub></b>	2018	143	88	196	ppm	no MCL

# RIVERPARK SYSTEM - 0790354

## Copper and Lead

Contaminant	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation (Yes/No)	Likely Source of Contamination
<b>Copper</b>	2018	1.3	1.3	0.0973	0	ppm	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
<b>Lead</b>	2018	0	15	1	0	ppb	No	Corrosion of household plumbing systems; Erosion of natural deposits.

## Disinfectants and Disinfection By-Products

Contaminant	Year	Average Level of Quarterly Data	Lowest Result of a Single Sample	Highest Result of a Single Sample	MRDLG	MRDL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Chlorine Residual, Free</b>	2018	1.46	0.36	3.14	4	4	ppm	No	Water additive used to control microbes.

## Inorganic Contaminants

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Major Sources in Drinking Water
<b>Barium</b>	2016	0.151	0.151	0.151	2	2	ppm	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
<b>Fluoride</b>	2017	0.75	0.75	0.75	4	4	ppm	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
<b>Nitrate (as Nitrogen)</b>	2018	0.03	0.03	0.03	10	10	ppm	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

## Radioactive Contaminants

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Gross Alpha (excluding Radon &amp; Uranium)</b>	2014	2	2	2	0	15	pCi/L	No	Erosion of natural deposits.
<b>Combined Radium 226 /228</b>	2014	2.9	2.9	2.9	0	5	pCi/L	No	Erosion of natural deposits.
<b>Uranium</b>	2014	1.2	1.2	1.2	0	30	ppb	No	Erosion of natural deposits.

## Secondary and Non-Regulated Conaminants

Contaminant	Year	Average Level Detected	Minimum Level Detected	Maximum Level Detected	Unit of Measure	Secondary MCL
<b>Calcium</b>	2016	33.9	33.9	33.9	ppm	no MCL
<b>Chloride</b>	2017	47	47	47	ppm	250
<b>Fluoride</b>	2017	0.75	0.75	0.75	ppm	2
<b>Iron</b>	2016	47	47	47	ppb	300
<b>Magnesium</b>	2016	5.95	5.95	5.95	ppm	no MCL
<b>Manganese</b>	2016	5.7	5.7	5.7	ppb	50
<b>pH</b>	2018	7.6	7.5	7.7	units	> 7
<b>Potassium</b>	2016	1.64	1.64	1.64	ppm	no MCL
<b>Sodium</b>	2016	69.5	69.5	69.5	ppm	no MCL
<b>Sulfate</b>	2017	9	9	9	ppm	300
<b>Total Alkalinity</b>	2017	197	197	197	ppm	no MCL
<b>Total Dissolved Solids</b>	2017	307	307	307	ppm	1000
<b>Total Hardness as CaCO<sub>3</sub></b>	2016	109	109	109	ppm	no MCL

# NEW TERRITORY SYSTEM - 0790253

## Bacteria

Contaminant	Year	MCLG	Total Coliform MCL	Highest # of Positive	Fecal Coliform or E Coli MCL	Total # of Positive E Coli or Fecal Coliform Samples	Violation (Y/N)	Likely Source of Contamination
<b>Coliform Bacteria</b>	2018	0	TT	1	Routine and repeat samples are total coliform-positive and either is E. coli-positive	0	No	Naturally present in the environment.

## Copper and Lead

Contaminant	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation (Y/N)	Likely Source of Contamination
<b>Copper</b>	2017	1.3	1.3	0.282	0	ppm	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
<b>Lead</b>	2017	0	15	0	0	ppb	No	Corrosion of household plumbing systems; Erosion of natural deposits.

## Disinfectants and Disinfection By-Products

Contaminant	Year	Average Level of Quarterly Data	Lowest Result of a Single Sample	Highest Result of a Single Sample	MRDLG	MRDL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Chlorine Residual, Free</b>	2018	1.45	0.49	2.04	4	4	ppm	No	Water additive used to control microbes.
Contaminant	Year	Highest Average Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Haloacetic acids (HAA5)</b>	2018	0.3	0.0	1.1	No Goal for the total	60	ppb	No	By-product of drinking water disinfection.
<b>TTHMs (Total trihalomethanes)</b>	2018	28.2	0.0	75.4	No Goal for the total	80	ppb	No	By-product of drinking water disinfection.

## Synthetic Organic Contaminants including pesticides and herbicides

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Di(2-ethylhexyl)phthalate</b>	2018	0.76	0	0.76	0	6	ppb	No	Discharge from rubber and chemical factories.

## Inorganic Contaminants

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Major Sources in Drinking Water
<b>Arsenic</b>	2018	2.6	2.2	2.6	0	10	ppb	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
<b>Barium</b>	2018	0.194	0.162	0.194	2	2	ppm	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
<b>Fluoride</b>	2017	0.57	0.24	0.57	4	4	ppm	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
<b>Nitrate (as Nitrogen)</b>	2018	0.12	0.02	0.12	10	10	ppm	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
<b>Selenium</b>	2018	3.4	0	3.4	50	50	ppb	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.

## Radioactive Contaminants

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Beta/photon emitters*</b>	2015	4.5	0	4.5	0	50*	pCi/L	No	Decay of natural and man-made deposits.
<b>Gross Alpha (excluding Radon &amp; Uranium)</b>	2015	6	2	6	0	15	pCi/L	No	Erosion of natural deposits.
<b>Combined Radium 226/228</b>	2015	2.4	2.4	2.4	0	5	pCi/L	No	Erosion of natural deposits.
<b>Uranium</b>	2015	2.8	0	2.8	0	30	ppb	No	Erosion of natural deposits.

\* EPA considers 50 pCi/L to be the level of concern for beta particles.

## Secondary Constituents and Other Non-Regulated Contaminants

Contaminant	Year	Average Level Detected	Minimum Level Detected	Maximum Level Detected	Unit of Measure	Secondary MCL
<b>Calcium</b>	2018	49.4	40.3	58.5	ppm	no MCL
<b>Chloride</b>	2017	43	42	45	ppm	250
<b>Fluoride</b>	2017	0.37	0.24	0.57	ppm	2
<b>Iron</b>	2018	23	14	32	ppb	300
<b>Magnesium</b>	2018	8.5	9.8	3.9	ppm	no MCL
<b>Nickel</b>	2018	0.6	0	1.1	ppb	100
<b>pH</b>	2018	7.9	7.4	8.2	units	> 7
<b>Potassium</b>	2018	2.55	2.52	2.57	ppm	no MCL
<b>Sodium</b>	2018	44.4	33.1	55.6	ppm	no MCL
<b>Sulfate</b>	2017	14	14	15	ppm	300
<b>Total Alkalinity</b>	2017	186	181	193	ppm	no MCL
<b>Total Dissolved Solids</b>	2017	305	300	313	ppm	1000
<b>Total Hardness as CaCO<sub>3</sub></b>	2018	158	130	186	ppm	no MCL

# GREATWOOD SYSTEM - 0790296

## Copper and Lead

Contaminant	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation (Yes/No)	Likely Source of Contamination
<b>Copper</b>	2016	1.3	1.3	0.14	0	ppm	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
<b>Lead</b>	2016	0	15	1.3	0	ppb	No	Corrosion of household plumbing systems; Erosion of natural deposits.

## Disinfectants and Disinfection By-Products

Contaminant	Year	Average Level of Quarterly Data	Lowest Result of a Single Sample	Highest Result of a Single Sample	MRDLG	MRDL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Chlorine Residual, Free</b>	2018	1.49	0.38	3.85	4	4	ppm	No	Water additive used to control microbes.
<b>Haloacetic acids (HAA5)</b>	2018	0.4	0.0	1.4	No Goal for the total	60	ppb	No	By-product of drinking water disinfection.
<b>TTHMs (Total trihalomethanes)</b>	2018	1.0	0.0	4.0	No Goal for the total	80	ppb	No	By-product of drinking water disinfection.

## Inorganic Contaminants

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Major Sources in Drinking Water
<b>Arsenic</b>	2018	3	2.3	3	0	10	ppb	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
<b>Barium</b>	2018	0.183	0.164	0.183	2	2	ppm	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
<b>Fluoride</b>	2016	0.86	0.51	0.86	4	4	ppm	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
<b>Nitrate (as Nitrogen)</b>	2018	0.03	0.02	0.03	10	10	ppm	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
<b>Selenium</b>	2018	4.1	0	4.1	50	50	ppb	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.

## Volatile Organic Contaminants

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Xylenes</b>	2018	0.0019	0	0.0019	10	10	ppm	No	Discharge from petroleum factories; discharge from chemical factories

## Radioactive Contaminants

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Beta/photon emitters*</b>	2018	6.2	0	6.2	0	50*	pCi/L	No	Decay of natural and man-made deposits.
<b>Gross Alpha (excluding Radon &amp; Uranium)</b>	2018	14	3	14	0	15	pCi/L	No	Erosion of natural deposits.
<b>Combined Radium 226/228</b>	2018	2.76	0	2.76	0	5	pCi/L	No	Erosion of natural deposits.
<b>Uranium</b>	2018	8.4	2.2	8.4	0	30	ppb	No	Erosion of natural deposits.

\* EPA considers 50 pCi/L to be the level of concern for beta particles.

## Secondary and Other Non-Regulated Contaminants

Contaminant	Year	Average Level Detected	Minimum Level Detected	Maximum Level Detected	Unit of Measure	Secondary MCL
<b>Calcium</b>	2018	41.2	31.9	50.4	ppm	no MCL
<b>Chloride</b>	2016	60	49	70	ppm	250
<b>Fluoride</b>	2016	0.69	0.51	0.86	ppm	2
<b>Iron</b>	2018	55.5	42	69	ppb	300
<b>Magnesium</b>	2018	7.6	6	9.2	ppm	no MCL
<b>Nickel</b>	2018	0.7	0	1.4	ppb	100
<b>pH</b>	2018	7.8	7.7	8.1	units	> 7
<b>Potassium</b>	2018	1.89	1.78	2	ppm	no MCL
<b>Sodium</b>	2018	57.3	37	77.6	ppm	no MCL
<b>Sulfate</b>	2016	11	11	11	ppm	300
<b>Total Alkalinity</b>	2016	214	204	224	ppm	no MCL
<b>Total Dissolved Solids</b>	2016	348	315	380	ppm	1000
<b>Total Hardness as CaCO<sub>3</sub></b>	2018	134	104	164	ppm	no MCL



## WATER LOSS

Each year the City is required to prepare and submit a water-loss audit to the Texas Water Development Board and report the system's water loss to our customers. A water-loss audit is a tool used by water utilities to assess the volume of water produced compared to the volumes of water sold to customers and used to maintain water quality. Water loss cannot be avoided, as line breaks, undetected leaks and line flushing occur throughout any water delivery system.

“We encourage Sugar Land citizens to contact us when they see a water leak,” said Joe Reyes, Public Works field operations manager. “Our customer service team investigates all water leak calls to the Public Works Department at 281-275-2450 or 311.”



In addition to the percentage of water loss, the City uses the Infrastructure Leakage Index (ILI) as a benchmark of leakage in the Main System. The ILI is a methodology developed by the International Water Association and adopted in 2002 by the American Water Works Association as a performance indicator for systems with more than 3,300 connections. The ILI is the ratio of real (actual) water loss versus unavoidable leakage or unavoidable real losses (UARL).

In 2018, water loss in the Main System was 9.5 % of the 6,087 million gallons produced, which translates to an ILI of 2.48. Water Loss and ILI for Greatwood was 11.1% and 2.76; New Territory experienced a loss of 14.5% and an ILI of 4.26. In RiverPark water loss was 2.4%; because RiverPark is a smaller system the ILI is not a valid indicator.

City staff strives to minimize water losses through timely response to all water calls, short time leak repair protocols, routine system maintenance, a robust meter replacement program and documenting water used for system maintenance and water quality.

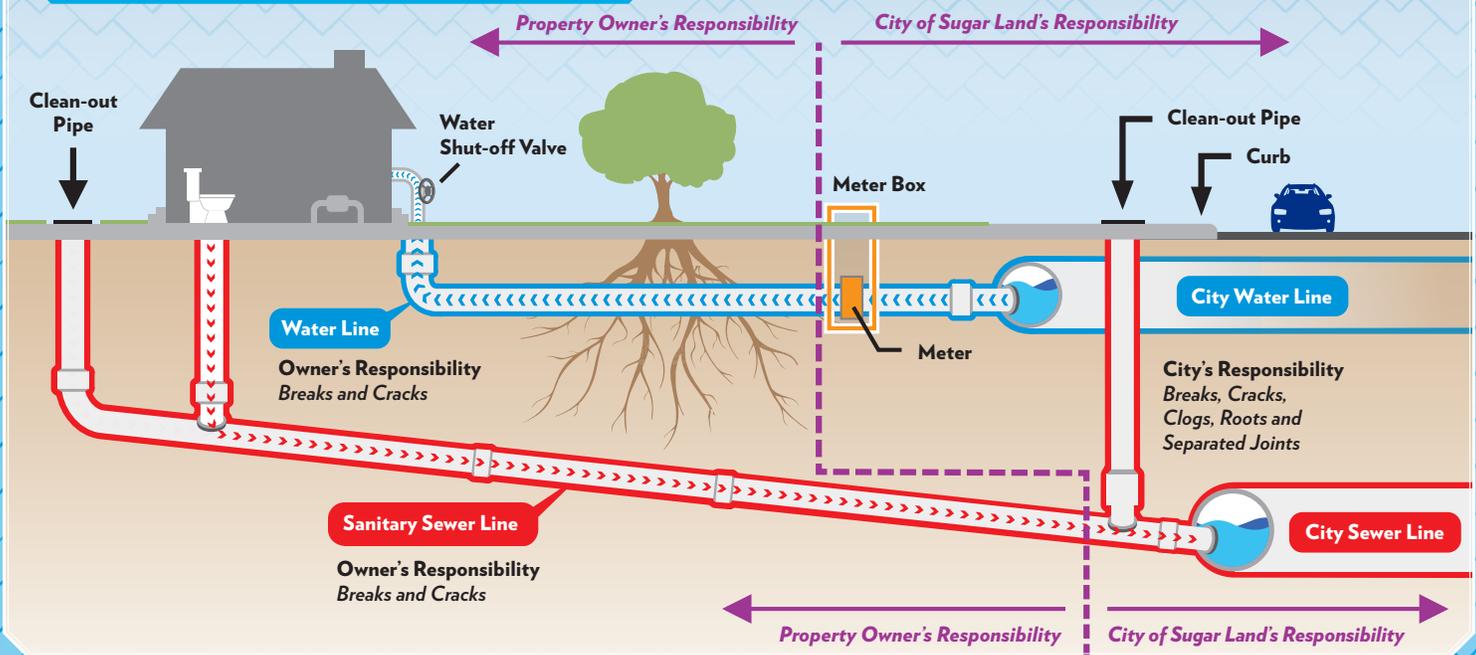


### REPORT WATER LEAKS

If you see a water leak along a roadway or in a yard, please report it to the **Public Works Department**.

**CALL 24/7: 281-275-2450 or 311**

## WATER AND SEWER LINES



## AVOID SANITARY SEWER BACK-UPS

In addition to leaks in the City's lines, leaks can occur in clogged sewer lines in homes and businesses. The City repairs stoppages in its collection system. Household clogs may require the resident to hire a plumber. Reyes says: "It is always good to call the City first. Hiring a plumber can be costly, and we do not reimburse homeowners for a plumber if the City was not called first."

Sewer lines can become clogged by fat, oil, grease and feminine hygiene products, among other things. To prevent sewer line stoppages, dispose of the following items in the trash, not in the drain, disposal or toilet.

- egg shells
- "flushable" wipes
- diapers
- fruit and vegetable peels
- hygiene products
- oil or grease

If water is flowing down a drain more slowly than usual or water backs up, report the problem to the City's **24-hour customer service line at 281-275-2450 or 311**. If necessary, a city employee will come to a home or business to investigate the problem and determine whether the clog is in the home's wastewater line or the City's collection pipe.



### AVOIDANCE STRATEGIES

- Scrape grease and fatty food scraps into the trash.
- Collect cooking oil in container; then either recycle the oil or place the container in the garbage.
- Never pour sauces down the drain, dispose in the trash.
- Potato, vegetable, and egg shell peels belong in the trash or compost bin.
- Only toilet tissue down the toilet; no "flushable" wipes or personal hygiene products.

### COOKING OIL DROP-OFF CENTER

Public Works Service Center • 101-A Gillingham Lane  
Monday-Friday, 8 a.m.-5 p.m.

City residents may dispose of up to 10 gallons of liquid cooking oil per day at no charge at the Public Works Service Center. The cooking oil recycling center is for residential customers only and includes only liquid cooking grade fats, oils and grease, and not petroleum products. For more information, call 311.

