



SUGAR LAND

2023

WATER QUALITY REPORT

CITY OF SUGAR LAND
Public Works

Main System
PWS 0790005

River Park 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.

TABLE OF CONTENTS

Director’s Message	3	Public Water Systems Map.....	10
What is a Water Quality Report?.....	4	Definitions	11
Sugar Land’s Water Sources	4	Notice of Surface Water Monitoring Violation.....	12
Advanced Metering	5	Availability of Monitoring Data for Unregulated Contaminants	13
Disinfecting Sugar Land’s Water	6	Water Quality Data Tables	14
Possible Contaminants.....	6	Main System.....	14
Updates on the EPA Lead and Copper Rule.....	7	River Park System.....	18
Main System Overview	8	New Territory System.....	20
<i>Cryptosporidium</i> and <i>Giardia</i>	8	Greatwood System.....	22
Production and Distribution Profile.....	8	Water Loss & Water Leaks.....	24
Surface Water Filtration Process.....	9	Water and Sewer Lines.....	25
Potable Water Production and Distribution Profile.....	9	Avoiding Sanitary Sewer Back-ups	25
Water Quality Data	10		

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

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.

The Utilities staff of the City of Sugar Land Public Works Department present this Water Quality Report to inform you, our customer, of water quality standards, sampling results, and other developments in Sugar Land's four drinking water systems. This report represents another year of commitment, determination, and collaboration between numerous trained and licensed field staff, managers and councilmembers to produce and deliver safe drinking water to your home and business.

As the Director of Utilities, I am pleased to report the water we supply continues to meet all health-based drinking water criteria as well as primary and aesthetic standards and is maintained 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 ensures this by diligently sampling from many locations throughout the City's systems on a daily basis. Samples undergo testing for chemical, bacteriological and other possible contaminants to assure the water we deliver is compliant and meets your expectations.

But assuring your drinking water is safe to drink is only one component of what we do. Our Water and Wastewater collections and facilities teams routinely work early in the morning and into the night, helping customers, logging water wells and pumps, and maintaining and repairing our water infrastructure.

In addition, staff collects and analyzes data for regulatory reporting and short and long-term infrastructure improvements. In continuing to invest in the management and care of our water resources and infrastructure, Public Works began the deployment of Advanced Metering Infrastructure (AMI) in 2023. AMI, an integrated system of customer water meters, communication networks and data management systems, provide accurate real-time water use information, resulting in a data driven, modernized water billing infrastructure an improved ability to reduce water loss. The benefits of this program are passed to the resident in the form cost savings and a sustainable and reliable water supply for future generations.

Just as its residents, the City of Sugar Land staff strives to be **Bold** in our ideas, decisions and actions, **Loyal** to our mission and vision, **Adaptable** in changing times, **Zealous** in our pursuit of unmatched service and quality and **Empowered** with the knowledge, resources and ability to fulfill our duties.

We are Sugar Land Water and together we're trail**BLAZ(E)**ing a life better than we could have ever imagined!



Katie Clayton, P.E.
Director of Utilities

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 29,643 metered connections in the city limits east of the Brazos River, and the River Park System serves 1,798 metered connections in the River Park subdivision. Greatwood and New Territory are served by their own systems with 4,659 and 4,967 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 River Park System's two groundwater wells pull water from the Chicot and Evangeline aquifers. The groundwater is treated at the City's River Park groundwater plant and then distributed to customers. Greatwood and New Territory are supplied by 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 ASSESSMENTS

TCEQ completed an assessment of your source water, and results indicate that some of our sources are susceptible to certain contaminants. The sampling requirements for your water system is based on this susceptibility and previous sample data. Any detections of these contaminants will be found in this Consumer Confidence Report. For more information on source water assessments and protection efforts at our system, call 281-275-2450 or 311.

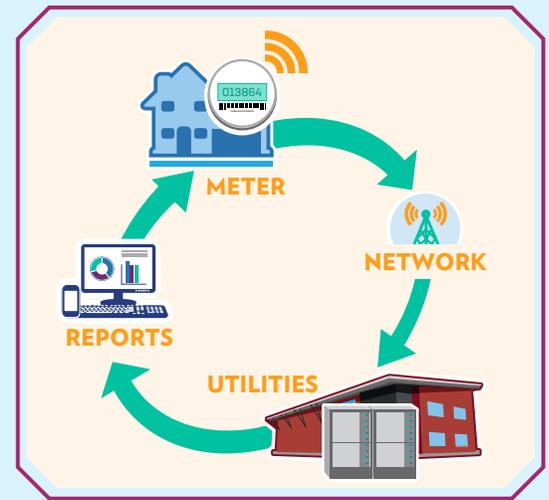
OPPORTUNITIES FOR PUBLIC COMMENT ON WATER PLANNING AND WATER QUALITY

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**.

ADVANCED METERING INFRASTRUCTURE (AMI)

The City of Sugar Land's water infrastructure is undergoing a significant upgrade with the implementation of the Advanced Metering Infrastructure (AMI). This technology eliminates the need for manual meter reading by allowing meters to be read remotely, ensuring more accurate water bills for residents, earlier leak detection, and insights on the overall water system. Currently, the AMI project has installed 25% of the 40,000 water meters in the City.

Residents will have access to their hourly water usage with the Customer Portal that is scheduled to be released by the end of 2024. With this portal, residents will be able to see their water usage, sign up for leak alerts, and get communication from the City.



WHAT TO EXPECT DURING THE INSTALL

Pedal Valves Inc (PVI) will be going to every meter to install or retrofit AMI compatible meters and other necessary equipment. PVI employees are in marked vehicles, wearing PVI-marked vests, and will have ID badges. Below are some installation specifics:

- PVI employees will attempt to make contact residents before the installation
- The installation process should take 15-30 minutes
- There is a possibility of a temporary service interruption
- PVI will NOT need access to your home to complete the installation
- Pre- and Post- Installation door tags will be placed at your door to alert you of the AMI installation

HOW DO I STAY INFORMED ABOUT AMI?

General communication will be sent using social media, the City's website, and HOA newsletters. Sign up to receive regular updates as the AMI project moves forward.

For more information, visit www.SugarLandTX.gov/AMI and www.SugarLandTX.gov/AMIStatusMap.

The new AMI and customer portal will provide many benefits, including:

- Provide customers with information and tools they need to make informed choices about their water usage behaviors and patterns
- Alert customers to potential leaks by identifying uncharacteristic water usage
- Improve water meter accuracy and reduce unauthorized water consumption
- Allow the City to remotely monitor and diagnose meter operation issues

Installation kicked off in October of 2023 with completion slated for Summer 2025."

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 River Park, 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. For more information on taste, odor, or color of drinking water, please contact the system's business office. 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.

UPDATES ON THE EPA LEAD AND COPPER RULE

The Environmental Protection Agency's (EPA) Lead and Copper Rule, first implemented in 1991, aims to limit concentrations of lead and copper that enter drinking water, generally through corrosion of water pipes. The use of lead pipes for installation or maintenance of public and private water systems was banned in 1986. The EPA has recently released updated guidelines for lead and copper monitoring for public drinking water providers throughout the country. The new guidelines, known as Lead and Copper Rule Revisions (LCRR), require water systems to prepare an inventory of service line materials by October 2024.

Lead is rarely found naturally in our source water or in the treated water in our distribution system. Lead in drinking water is primarily from some materials and components associated with service lines and home plumbing. In 1986, Congress enacted the "lead ban," which stated that not only public water systems, but also anyone else who intends to install or repair drinking water plumbing connected to a public water system, must use "lead free materials." As a result, homes built in or after 1988 are far less likely to have lead solder.

Under the new LCRR requirements, the city must identify service lines, including both the city-owned portion and the customer-owned portion, which might contain lead. The service line is the piping that connects the home or business to the water main. The city and the property owner share ownership of the service line. The city owns the portion from the main to the water meter, including the water meter. The property owner is responsible for the portion from the meter to the point it enters the home or business, as well as all the plumbing in the home or building. Currently, there are no known lead service lines in Sugar Land's water systems. The City's Lead Service Line Inventory Program is underway and will be complete by October 2024. The inventory will be made available to the public on the city's website.

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.

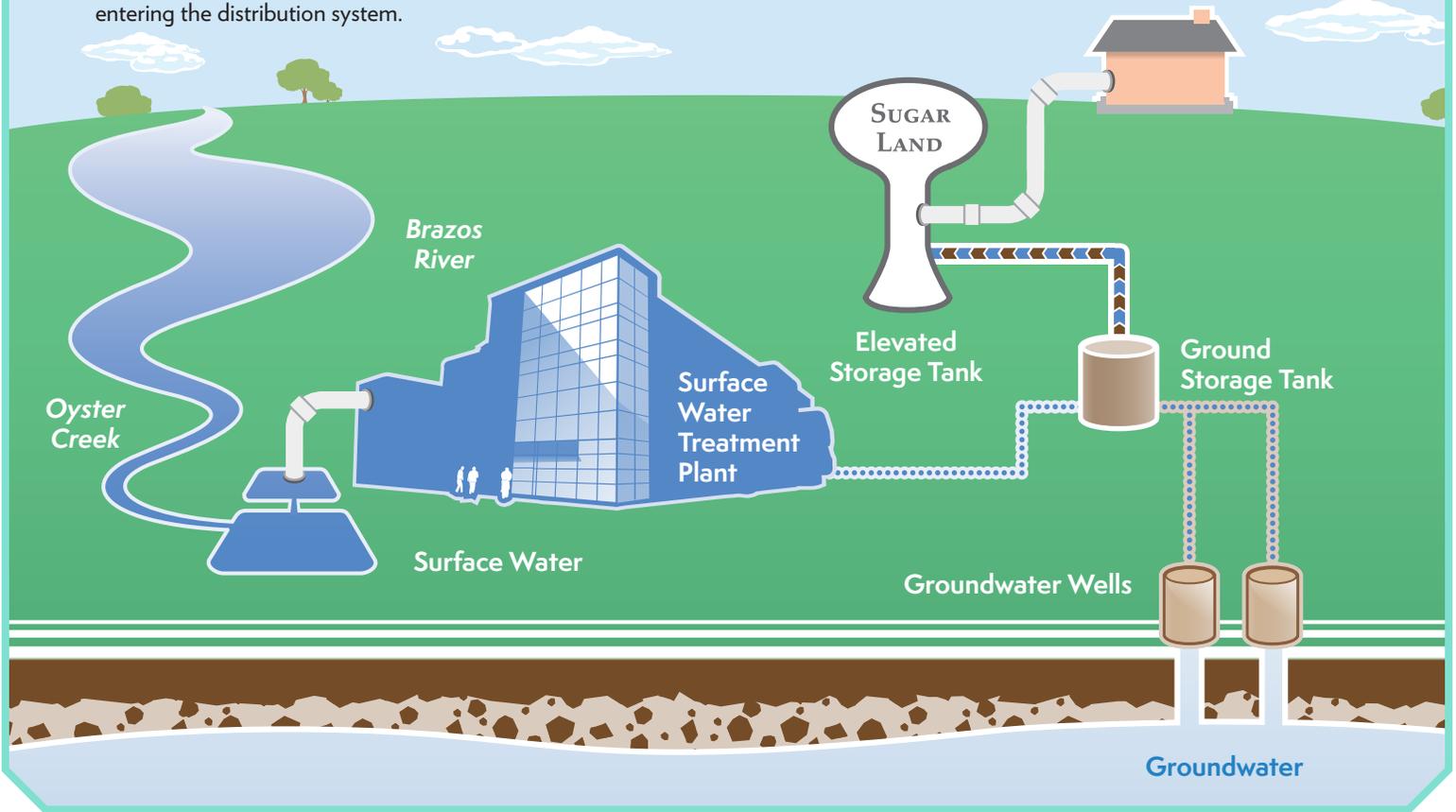
When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 800-426-4791 or at <http://www.epa.gov/safewater/lead>.

You may find information about how Sugar Land is keeping lead out of our customer's water on the city's website at www.SugarLandTX.gov/WaterQuality.



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

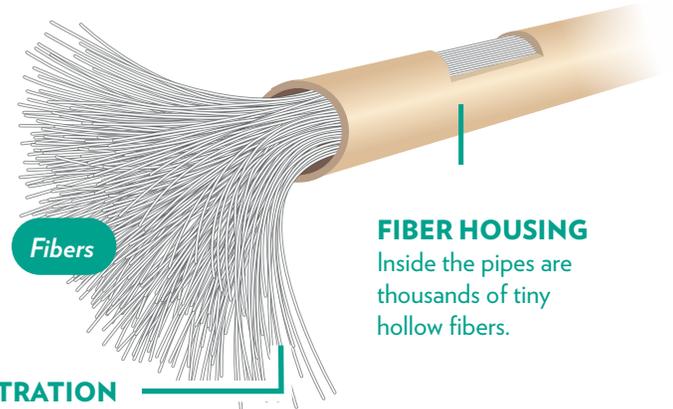
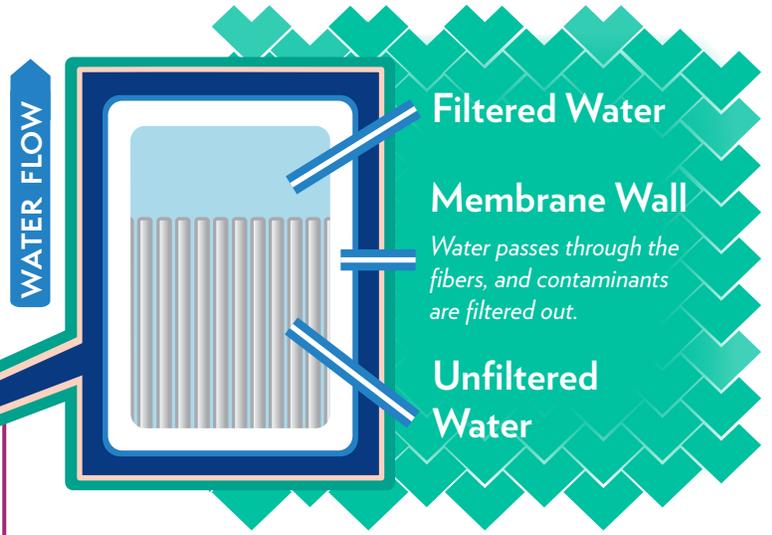
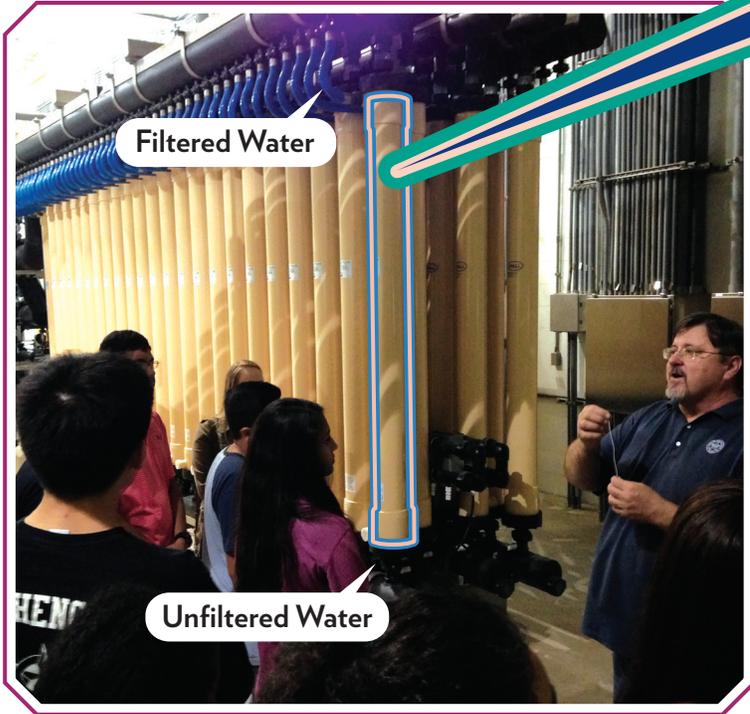
Cryptosporidium and *Giardia* are waterborne, pathogenic organisms. They can be passed into the environment through urban runoff or a sewage leak. Exposure to these organisms can lead to symptoms such as diarrhea, abdominal discomfort, fever, weight loss, malabsorption and anemia. Although not life-threatening 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 1 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 River Park, 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 River Park, 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 River Park 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**.

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.

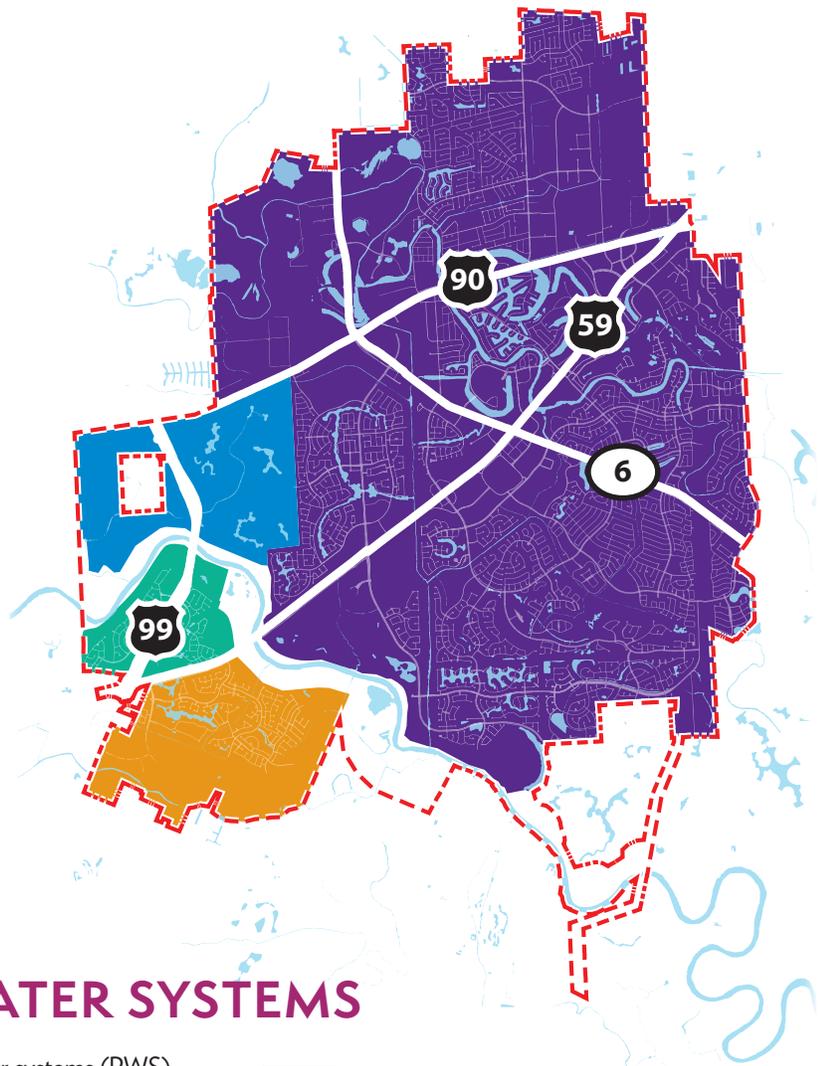
Potable Water Production and Distribution Profile

2023	Main System	River Park System	New Territory System	Greatwood System
Population	80,318	3,753	14,562	12,393
Groundwater Source	Chicot Aquifer and Evangeline Aquifer			
Surface Water Source (Main System)	Brazos River & Oyster Creek			
Annual Demands (million gallons)	6,779	325	819	790
System Capacity (million gallons / day)	62.5	4.0	11.1	9.2
Daily Average Demands (million gallons)	18.57	0.89	2.2	2.2
Daily Average Demand per Capita (gallons)	231	237	154	175
Number of Groundwater Wells	14	2	3	4
Average Well Depth (feet)	1,250	1,342	1,000	1,600
Well Production Capacity (million gallons / day)	51.6	4.0	11.1	9.2
Surface Water Plant Capacity (million gallons / day)	10.85			
Ground Storage (# of Tanks)	15	2	6	5
Ground storage tank capacity (million gallons)	15.2	0.7	2.3	1.0
Elevated Storage Tanks	5			
Elevated Storage Tank Capacity (million gallons)	6.2			
Miles of Distribution Line	458	21.00	57.20	60
Number of Water Meters	29,012	1,439	4,707	4,653

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 River Park 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.

-  **MAIN SYSTEM**
-  **RIVER PARK SYSTEM**
-  **NEW TERRITORY SYSTEM**
-  **GREATWOOD SYSTEM**
-  **CITY LIMITS**

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.



Notice of Surface Water Monitoring Violation

SURFACE WATER MONITORING, ROUTINE MAJOR

The CITY OF SUGAR LAND, PWS ID TX0790005, has violated the monitoring and reporting requirements set by Texas Commission on Environmental Quality (TCEQ) in Title 30, Texas Administrative Code (30 TAC), Section 290, Subchapter F. Public water systems that treat surface water and/or ground water under the direct influence of surface water are required to submit monthly operating reports with operational data of the treatment, disinfection and quality of the water provided to their customers.

We failed to monitor and/or report the following constituents: LT2ESWTR.

This/These violation(s) occurred in the monitoring period(s): September 1, 2023 – September 30, 2023.

Results of regular monitoring are an indicator of whether or not your drinking water is safe. We did not complete all monitoring and/or reporting for surface water constituents, and therefore TCEQ cannot be sure of the safety of your drinking water during that time.

We are taking the following actions to address this issue:

As part of our operating permit, the Surface Water Treatment Plant is required to perform Direct Integrity Tests (DITs) on each membrane filtration unit at least once every seven days. The SWTP performs DITs on the filtration units twice weekly, on Mondays and Fridays. On September 4, 2023, the SWTP failed to perform a Direct Integrity Test on two of the five filter units. The failure to perform DITs on two of the filter units was discovered on September 5, 2023, after which a DIT was performed immediately on all the filter units with passing results.

In addition to DITs, turbidity is measured as a secondary method of ensuring the integrity of the membrane filtration units. All required turbidity measurements were taken during this time, and results were within compliance.

All water quality testing at the water treatment plants and in the distribution system during this time was completed as required, and all water quality was in compliance with TCEQ regulations.

To address this monitoring failure, SWTP operators have been instructed to strictly maintain the Monday and Friday DIT schedule on all the membrane filtration units. An additional alarm notification system has been implemented to alert the SWTP supervisors and manager if a DIT has not been completed.

Please share this information with all people who drink this water, especially those who may not have received this notice directly (i.e., people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

If you have questions regarding this matter, you may contact John Bailey, Surface Water Plant Manager, at 281-275-2450.

Posted /Delivered on: June 24, 2024



AVAILABILITY OF MONITORING DATA FOR UNREGULATED CONTAMINANTS

The City of Sugar Land’s water systems participated in gathering data under the EPA’s Fifth Unregulated Contaminant Monitoring Rule (UCMR5). 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. As our customers, you have a right to know that this data is available. UCMR results and occurrence data can be viewed by the public at <https://www.epa.gov/dwucmr/occurrence-data-unregulated-contaminant-monitoring-rule>.

Under UCMR 5, public water systems nationwide were required to monitor for 29 per- and polyfluoroalkyl substances (PFAS) and lithium in drinking water. Between February 2023 and February 2024, the city monitored for these compounds in the drinking water served by our Main water system, River Park, Greatwood, and New Territory water systems. Results from this monitoring are presented in the tables below. Additional information regarding PFAs and the city’s UCMR5 monitoring can be found at www.SugarLandTX.gov/WaterQuality.

For questions regarding City of Sugar Land’s monitoring, contact Ashley Kirkpatrick, Water Quality Manager at 281-275-2450 or 311.

Contaminant	Year	Average Level Detected	Minimum Level Detected	Maximum Level Detected	Unit of Measure
Main System					
Lithium	2023	17.4	0	32.2	ppb
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	2023-2024	0.3	0	3.4	ppt
Perfluorobutanoic acid (PFBA)	2023-2024	8.8	0	74.8	ppt
Perfluorobutanesulfonic acid (PFBS)	2023-2024	1.1	0	5.8	ppt
perfluoroheptanoic acid (PFHpA)	2023-2024	0.3	0	3.6	ppt
Perfluorohexanoic acid (PFHxA)	2023-2024	2.1	0	12.9	ppt
perfluorooctanoic acid (PFOA)	2023-2024	0.3	0	4.1	ppt
Perfluoropentanoic Acid (PFPeA)	2023-2024	65.9	0	358	ppt
1H,1H, 2H, 2H-perfluorooctane sulfonic acid (6:2FTS)	2023-2024	55.2	0	672	ppt
River Park System					
Lithium	2023	24	23	25	ppb
New Territory System					
Lithium	2023	19.2	15.6	24.3	ppb
Greatwood System					
Lithium	2023	25.7	21.7	29.4	ppb

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 2023.

ABBREVIATIONS

N/A: Not Applicable	ppm: parts per million or milligrams per liter (mg/L)
NTU: Nephelometric Turbidity Units (a measure of turbidity)	ppb: parts per billion, or micrograms per liter (µg/L)
pCi/L: pico Curies per Liter; measure of radioactivity	ppt: parts per trillion, or nanograms per liter (ng/L)

1 ppm is equal to:

- One drop of water in a 10 gallon fish tank
- One minute in 2 years
- One penny in \$10,000

1 ppb is equal to:

- One drop of water in a 10,000 gallon swimming pool
- One minute in 2,000 years
- One penny in \$10,000,000

1 ppt is equal to:

- One drop of water in 20 Olympic-sized swimming pools
- One minute in 2,000,000 years
- One penny in \$10,000,000,000

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 (Y/N)	Likely Source of Contamination
Coliform Bacteria	2023	0	5% of monthly samples are positive	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
Copper	2023	1.3	1.3	0.291	0	ppm	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	2023	0	15	2.54	0	ppb	No	Corrosion of household plumbing systems; Erosion of natural deposits.

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
Atrazine	2023	0.62	0	0.62	3	3	ppb	No	Runoff from herbicide used on row crops.

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
Beta/photon emitters*	2023	5.6	0	5.6	0	50*	pCi/L	No	Decay of natural and man-made deposits.
Gross Alpha (excluding Radon & Uranium)	2023	4	0	4	0	15	pCi/L	No	Erosion of natural deposits.
Combined Radium 226 /228	2023	1.6	0	1.6	0	5	pCi/L	No	Erosion of natural deposits.
Uranium	2023	7	0	7	0	30	ppb	No	Erosion of natural deposits.

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

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. The percentage of TOC removal was measured each month, and the system met all TOC removal requirements set.

Constituent	Average	Minimum	Maximum	MCLG	MCL	Unit of Measure	Likely Source of Contamination
TOC- Source Water	4.9	2.5	6.9	n/a	TT	ppm	Naturally present in the environment.
TOC- Drinking Water	2.7	0.9	4.4	n/a	TT	ppm	Naturally present in the environment.
TOC % Removal	46.1	27.8	68	n/a	TT	%	n/a

Disinfectants and Disinfection By-Products

Contaminant	Year	Average Level	Minimum Level Detected	Maximum Level Detected	MRDLG	MRDL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
Chloramines (Chlorine Residual, Total)	2023	2.77	0.53	4.10	4	4	ppm	No	Water additive used to control microbes.
Chlorine Dioxide	2023	80	0	250	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
Haloacetic acids (HAA5)	2023	7.9	0.0	11.7	No Goal for the total	60	ppb	No	By-product of drinking water disinfection.
TTHMs (Total trihalomethanes)	2023	4.7	0.0	6.8	No Goal for the total	80	ppb	No	By-product of drinking water disinfection.
Chlorite	2023	0.35	0.0	0.41	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
Arsenic	2023	2.3	0	2.3	0	10	ppb	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
Barium	2023	0.237	0.113	0.237	2	2	ppm	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Cyanide	2023	60	0	60	200	200	ppb	No	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories.
Fluoride	2023	0.83	0.21	0.83	4	4	ppm	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate (as Nitrogen)	2023	1.12	0	1.12	10	10	ppm	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Selenium	2023	8.3	0	8.3	50	50	ppb	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.

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
Highest single measurement	1.0 NTU	0.08	N	Soil runoff
Lowest monthly % meeting limit	0.3 NTU	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
Aluminum	2023	6	0	36	ppb	200
Bromodichloromethane	2023	0.3	0	1.3	ppb	no MCL
Bromoform	2023	0.1	0	1	ppb	no MCL
Calcium	2023	35.1	9.7	53.4	ppm	no MCL
Chloride	2023	60	46	75	ppm	250
Chloroform	2023	0.1	0	1	ppb	no MCL
Chlorodibromomethane	2023	0.4	0	1.9	ppb	no MCL
Iron	2023	37	0	66	ppb	300
Manganese	2023	7.9	0	15.3	ppb	50
Magnesium	2023	8.4	2.9	11.1	ppm	no MCL
Nickel	2023	1.1	1	2.5	ppb	100
pH	2023	7.9	7.5	8.3	units	> 7
Potassium	2023	3.4	1.8	6.1	ppm	no MCL
Sodium	2023	78	43	128	ppm	no MCL
Sulfate	2023	31	15	59	ppm	300
Total Alkalinity	2023	186	137	223	ppm	no MCL
Total Dissolved Solids	2023	340	312	380	ppm	1000
Total Hardness as CaCO ₃	2023	122	36	179	ppm	no MCL

Violations

Long Term Enhanced SWTR	The Long Term Enhanced Surface Water Treatment Rule supplements existing regulations by targeting additional <i>Cryptosporidium</i> treatment to higher risk systems. It also contains provisions to reduce risks from uncovered finished water reservoirs and to ensure systems maintain microbial protection when reducing the formation of disinfection byproducts.		
Violation Type	Violation Begin	Violation End	Violation Explanation
Monitoring, RT Major (LT2-Filtered)	9/1/2023	9/30/2023	We failed to test our drinking water for the contaminant and period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated. More information regarding this violation can be found on page 12.

RIVER PARK 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
Copper	2021	1.3	1.3	0.124	0	ppm	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	2021	0	15	0.973	0	ppb	No	Corrosion of household plumbing systems; Erosion of natural deposits.

Disinfectants and Disinfection By-Products

Contaminant	Year	Average Level	Minimum Level Detected	Maximum Level Detected	MRDLG	MRDL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
Chlorine Residual, Free	2023	1.57	0.63	2.08	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)	Likely Source of Contamination
Barium	2022	0.161	0.161	0.161	2	2	ppm	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Fluoride	2023	0.42	0.42	0.42	4	4	ppm	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate (as Nitrogen)	2023	0.05	0.05	0.05	10	10	ppm	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Selenium	2022	3	3	3	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
Combined Radium 226 /228	2020	1.5	1.5	1.5	0	5	pCi/L	No	Erosion of natural deposits.
Uranium	2020	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
Calcium	2022	26.8	26.8	26.8	ppm	no MCL
Chloride	2023	44	44	44	ppm	250
Iron	2022	38	38	38	ppb	300
Magnesium	2022	5.6	5.6	5.6	ppm	no MCL
Manganese	2022	6.3	6.3	6.3	ppb	50
pH	2023	7.7	7.6	7.7	units	> 7
Potassium	2022	1.6	1.6	1.6	ppm	no MCL
Sodium	2022	74.9	74.9	74.9	ppm	no MCL
Sulfate	2023	13	13	13	ppm	300
Total Alkalinity	2023	197	197	197	ppm	no MCL
Total Dissolved Solids	2023	301	301	301	ppm	1000
Total Hardness as CaCO₃	2022	90	90	90	ppm	no MCL

NEW TERRITORY SYSTEM - 0790253

Copper and Lead

Contaminant	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation (Y/N)	Likely Source of Contamination
Copper	2023	1.3	1.3	0.223	0	ppm	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	2023	0	15	0.229	0	ppb	No	Corrosion of household plumbing systems; Erosion of natural deposits.

Inorganic Contaminants

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
Barium	2022	0.106	0.106	0.106	2	2	ppm	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Fluoride	2023	0.54	0.22	0.54	4	4	ppm	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate (as Nitrogen)	2023	0.1	0	0.1	10	10	ppm	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

Disinfectants and Disinfection By-Products

Contaminant	Year	Average Level	Minimum Level Detected	Maximum Level Detected	MRDLG	MRDL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
Chlorine Residual, Free	2023	1.52	0.69	1.95	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
TTHMs (Total trihalomethanes)	2023	1.3	0.0	2.5	No Goal for the total	80	ppb	No	By-product of drinking water disinfection.

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
Beta/photon emitters*	2021	4.5	0	4.5	0	50*	pCi/L	No	Decay of natural and man-made deposits.
Gross Alpha (excluding Radon & Uranium)	2021	4.7	3	4.7	0	15	pCi/L	No	Erosion of natural deposits.
Combined Radium 226 /228	2021	1.5	0	1.5	0	5	pCi/L	No	Erosion of natural deposits.
Uranium	2021	3	0	3	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
Bromodichloromethane	2023	0.3	0	1	ppb	no MCL
Calcium	2022	17.7	17.7	17.7	ppm	no MCL
Chloride	2023	42	41	43	ppm	250
Chlorodibromomethane	2023	0.4	0	1.1	ppb	no MCL
Iron	2022	74	74	74	ppb	300
Magnesium	2022	4.3	4.3	4.3	ppm	no MCL
Manganese	2022	5.6	5.6	5.6	ppb	50
pH	2023	7.9	7.5	8.5	units	> 7
Potassium	2022	2.3	2.3	2.3	ppm	no MCL
Sodium	2022	86.4	86.4	86.4	ppm	no MCL
Sulfate	2023	14	13	15	ppm	300
Total Alkalinity	2023	192	183	200	ppm	no MCL
Total Dissolved Solids	2023	309	306	315	ppm	1000
Total Hardness as CaCO₃	2022	61.9	61.9	61.9	ppm	no MCL

GREATWOOD SYSTEM - 0790296

Water System Interconnect: During 2023 the water system interconnect between Sugar Land's Greatwood River Park systems was opened. Water produced in River Park supplemented the supply to customers in Greatwood during planned maintenance at two Greatwood Water Plants.

Copper and Lead

Contaminant	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation (Yes/No)	Likely Source of Contamination
Copper	2022	1.3	1.3	0.167	0	ppm	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	2022	0	15	1.51	0	ppb	No	Corrosion of household plumbing systems; Erosion of natural deposits.

Disinfectants and Disinfection By-Products

Contaminant	Year	Average Level	Minimum Level Detected	Maximum Level Detected	MRDLG	MRDL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
Chlorine Residual, Free	2023	1.55	0.94	2.22	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
Haloacetic acids (HAA5)	2023	0.6	0.0	1.0	No Goal for the total	60	ppb	No	By-product of drinking water disinfection.
TTHMs (Total trihalomethanes)	2023	2.6	0.0	3.7	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)	Likely Source of Contamination
Arsenic	2021	4.7	0	4.7	0	10	ppb	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
Barium	2021	0.182	0.108	0.182	2	2	ppm	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Fluoride	2022	0.78	0.61	0.78	4	4	ppm	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum 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
Gross Alpha (excluding Radon & Uranium)	2022	10	5	10	0	15	pCi/L	No	Erosion of natural deposits.
Combined Radium 226/228	2022	1.69	1.56	1.69	0	5	pCi/L	No	Erosion of natural deposits.
Uranium	2022	6.1	5	6.1	0	30	ppb	No	Erosion of natural deposits.

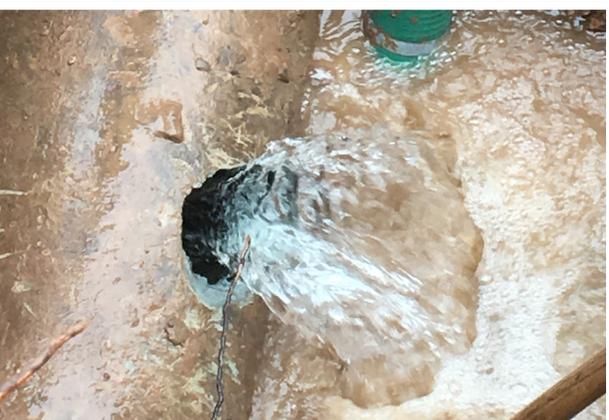
* EPA considers 50 pCi/L to be the level of concern for beta particles.

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
Xylenes	2023	0.0014	0	0.0014	10	10	ppm	No	Discharge from petroleum factories; discharge from chemical factories.

Secondary and Other Non-Regulated Contaminants

Contaminant	Year	Average Level Detected	Minimum Level Detected	Maximum Level Detected	Unit of Measure	Secondary MCL
Bromodichloromethane	2023	0.8	0	1.6	ppb	no MCL
Bromoform	2023	1.4	0	2.8	ppb	no MCL
Calcium	2021	28.9	12.7	45.1	ppm	no MCL
Chloride	2022	60	56	64	ppm	250
Chlorodibromomethane	2023	1.6	0	3.1	ppb	no MCL
Iron	2021	51.5	16	87	ppb	300
Magnesium	2021	5.8	3.2	8.4	ppm	no MCL
Manganese	2021	5.1	4	6.2	ppb	50
pH	2023	7.9	7.7	8.2	units	> 7
Potassium	2021	1.9	1.9	1.9	ppm	no MCL
Sodium	2021	107.3	45.6	169	ppm	no MCL
Sulfate	2022	10	9	10	ppm	300
Total Alkalinity	2022	216	211	220	ppm	no MCL
Total Dissolved Solids	2022	345	329	360	ppm	1000
Total Hardness as CaCO ₃	2021	95.9	44.8	147	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.

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 2023, water loss in the Main System was 11.1% of the 6.8 billion gallons produced, which translates to an ILI of 3.4. Water Loss and ILI for Greatwood was 10.2% and 3.0; New Territory experienced a loss of 18.6% and ILI of 5.2. In River Park water loss was 7.6%; because River Park is a smaller system the ILI is not a valid indicator.

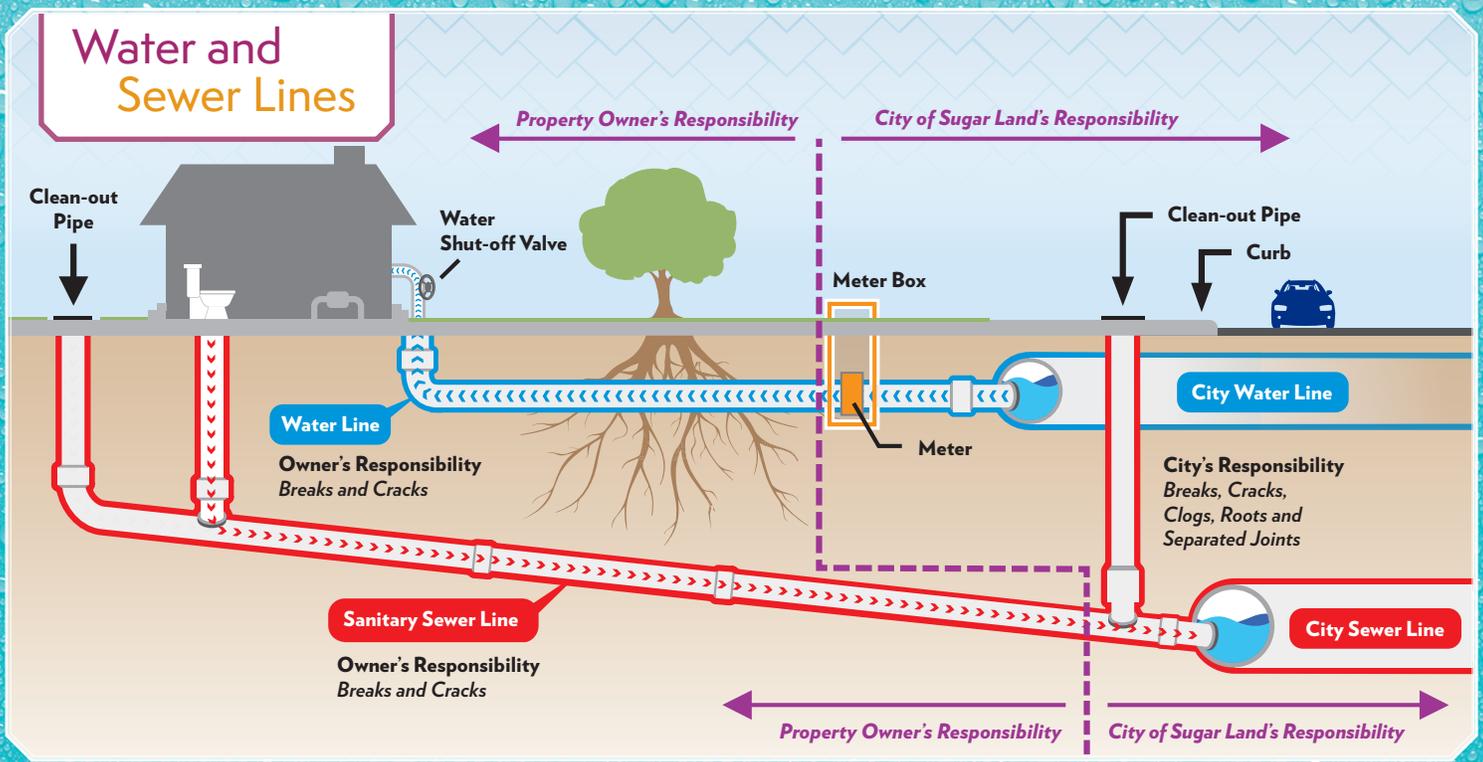
City staff strives to minimize water losses through timely response to all water calls, short time leak repair protocols, routine system maintenance, a robust meter replacement program and documenting water used for system maintenance and water quality.

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

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



AVOID SANITARY SEWER BACK-UPS

In addition to leaks in the City's water 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. Jason Haney 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



"Unlike toilet paper which breaks apart in water, wipes, made of woven fibers and even some nonwoven wipes, stay intact eventually clogging pumps and wrapping around floats and level sensors, key parts of the wastewater collection system. When parts fail in the collection system or your home or business, wastewater can overflow into the environment or cause backups indoors wreaking havoc and costing serious money. Toilets are not trashcans.

If it's not paper, toss it later!"

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.

