

# WATER QUALITY REPORT

# 2011

**Our Drinking Water Meets All Federal (EPA) Drinking Water Requirements. The City of Sugar Land Public Water System has been rated Superior.**

## MISSION STATEMENT

The Utilities Department takes pride in maintaining a tradition of producing ample 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.

## DIRECTOR'S MESSAGE

I appreciate the opportunity to present the 2011 Annual Water Quality Report and keep our customers apprised of the City's determination to consistently produce and deliver safe drinking water. This report is intended to provide you with important information about our water. The City supplies ample water to meet demands of our busy City, twenty-four hours-a-day, seven days-a-week. Short leak response time and routine preventative maintenance programs coupled with planning and constructing infrastructure improvements assure reliable delivery to your tap. Most importantly, the water we supply 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 team of licensed water

operators and water quality professionals take delivering clean, safe, drinkable water seriously and I am proud to report every water quality standard was met, with no EPA or TCEQ violations, again this year!

Just as having safe drinking water is serious business, so is having a generous supply of water. Last year's drought showed how vulnerable Texas' water supplies are during extreme weather conditions. As a result, we are tasked to honestly scrutinize our water use practices. Are we wasting water; using more than we really need? Total water use for Sugar Land averaged to 239 gallons per person per day in 2011. Daily peak potable water demand reached an all-time high of 37,468,000 gallons on June 17, 2011. High water demands significantly impact long term water planning and management strategies and place increased financial burden on our community. Reducing your

water use can be accomplished with simple changes in water use habits, frugal and efficient outdoor water use, replacing water guzzling appliances, and quickly repairing household leaks. Establishing water conserving practices today will decrease Sugar Land's total water needs over time and strengthen confidence that water restrictions can be avoided during severe conditions.

I hope you find the water quality information in this report helpful and I invite you contact us at 281-275-2450 when you have questions, concerns, or need to report a problem related to the city's water system. We are always happy to assist with information about your water quality and our water conservation programs.

SuEllen Staggs  
*Director of Utilities*



## WATER QUALITY

The Texas Commission on Environmental Quality (TCEQ) is responsible for overseeing the state's environmental areas, which includes the City of Sugar Land's water quality. The TCEQ collects and analyzes samples for metals, minerals, volatile and semi-volatile organic compounds, chlorine byproduct compounds and radiological compounds. The TCEQ has rated Sugar Land as having a "Superior" water system, its highest rating.

In addition to TCEQ-required daily process control samples taken at the water plants and system entry points, the City of Sugar Land performs over 85 bacteriological tests monthly in its distribution system and collects quality assurance/quality control samples at least once a week.

## WATER SOURCE

The City currently draws 100% of its drinking water from 17 permitted wells at 6 separate groundwater plants. These are deep wells with an average depth greater than 1200 feet, producing water from the Chicot and Evangeline aquifers. The TCEQ completed an assessment of our source water and results indicate that some of our sources are susceptible to certain contaminants. The sampling requirements for our water system are based on this susceptibility and previous sample data. Any detections of these contaminants may be found in this CCR. For more information on source water assessments and protection efforts, please call the Utilities Department at 281-275-2450.

## SECONDARY CONSTITUENTS

Many constituents (such as calcium, sodium or iron), which are often found in drinking water, can cause taste, color and odor problems. The taste and odor constituents are called secondary constituents and are regulated by the State of Texas, not the EPA. These constituents are not causes for health concerns. Therefore, secondaries are not required to be reported in this document but they may affect the

appearance and taste of your water. Secondary constituent information is available on the Utilities Department's page of the City's Web site, [www.sugarlandtx.gov](http://www.sugarlandtx.gov).

## OTHER WATER SOURCES

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, and in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water before treatment include: microbes, inorganic contaminants, pesticides, herbicides, radioactive contaminants and organic chemical contaminants (see definitions).

## NOTICE FROM THE EPA

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 contaminant and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 800-426-4791. 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. For more information on taste, odor or color of drinking water, call 281-275-2450. 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.

## IS CRYPTOSPORIDIUM OR GIARDIA IN OUR WATER SUPPLY?

Cryptosporidium and Giardia are waterborne pathogenic organisms. Both are naturally present in the intestines of most mammals including humans, and are passed into the environment through urban runoff or sewage disposal system failure. Exposure to Cryptosporidium or Giardia can lead to symptoms such as diarrhea, abdominal discomfort,

fever, weight loss, malabsorption or anemia. Although not life-threatening to healthy adults, Cryptosporidium and Giardia can be fatal to infants, the elderly, pregnant women and

immunocompromised persons.

Neither Cryptosporidium or Giardia is found in deep wells such as the City of Sugar Land's which are protected from surface water contamination. For more information about Cryptosporidium and Giardia and other microbial contaminants, contact the EPA's Safe Drinking Water Hotline at 800-426-4791.

## UNREGULATED CONTAMINANTS

Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

The water system described in this report serves customers within Sugar Land's corporate city limits.

# SUGAR LAND WATER QUALITY OVERVIEW

## Special Notice for the ELDERLY, INFANTS, CANCER PATIENTS, people with HIV/AIDS or other immune problems:

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

## INFORMATION ON LEAD LEVELS

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 2 minutes before using water

## FLUORIDE AND INFANT FORMULA

Interim Guidance from the American Dental Association (ADA)

The ADA has endorsed fluoridation of community water supplies as safe and effective for preventing tooth decay for more than 40 years. However, recent studies revealed infants might receive greater than optimal amounts of fluoride when fed formula mixed with water containing fluoride. The ADA recommends ways to reduce fluoride intake from reconstituted infant formula:

- Breast milk is widely acknowledged as the most complete form of nutrition for infants.
- Ready-to-feed formula is preferred to help ensure fluoride intake does not exceed optimal amounts.
- Liquid concentrate or powdered infant formula mixed with bottled water that is fluoride free or contains low levels of fluoride can reduce the risk of fluorosis.
- Occasional use of water containing optimal levels of fluoride should not appreciably increase a child's risk for fluorosis.

Parents and care givers should consult with their pediatrician, family physician or dentist on the most appropriate water to use to reconstitute infant formula.

More information is available from [www.ada.org/2467.aspx](http://www.ada.org/2467.aspx).

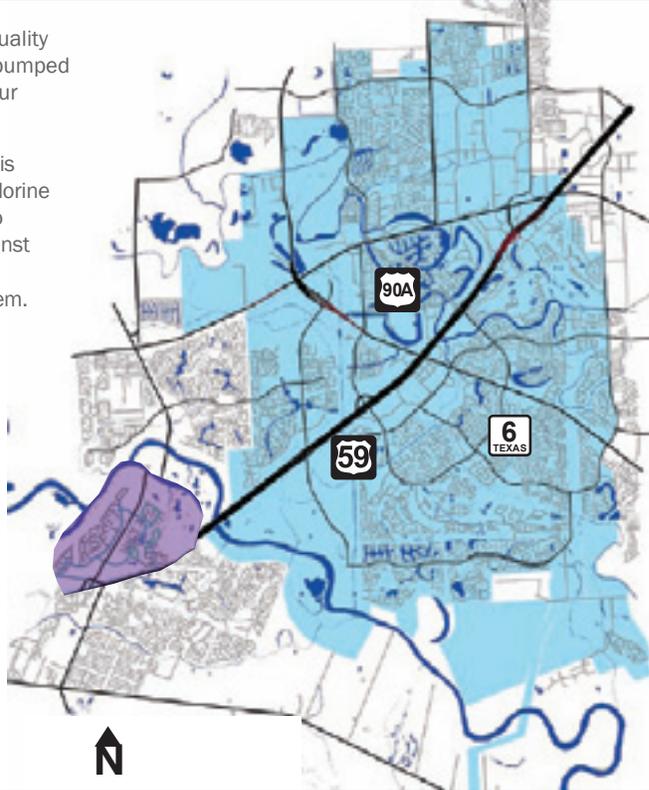
# DRINKING WATER AND YOUR HEALTH

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 800-426-4791.

for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

# CITY OF SUGAR LAND PUBLIC WATER SYSTEM #0790005

1. Our water comes from high quality groundwater sources and is pumped from deep wells into one of our groundwater plants.
2. Even though our groundwater is already of excellent quality, chlorine is added at our water plants to protect the finished water against microbial contaminants as it travels through the water system. At the same plants, fluoride is added to help prevent tooth decay. We also add corrosion inhibitors to reduce corrosion of metal components within the homeowner's private plumbing system.
3. Water then travels to your residence or place of business where you are provided with top quality and absolutely safe water.



■ Sugar Land water system  
■ RiverPark water system

## PRODUCTION AND DISTRIBUTION PROFILE CITY OF SUGAR LAND AND SUGAR LAND RIVERPARK

Annual system demand: 7.134 billion gal  
 Maximum peak Daily demand: 37.11 million gal  
 System capacity: 50.12 million gal/day  
 Daily average demand: 19.547 million gal  
 Daily average Demand per capita: 229 gal  
 Number of wells: 17  
 Average well depth: 1,250 feet  
 Ground storage capacity: 12.23 million gal  
 Elevated storage facilities: 4 towers/  
 4.3 million gal  
 Miles of distribution line: 423.4  
 Number of water meters: 27,435  
 Number of fire hydrants: 3,817  
 Number of valves: 5,225  
 Groundwater source: Chicot and Evangeline aquifers

### INORGANIC CONTAMINANTS

For each constituent, the Average, Minimum and Maximum Level Columns represent the City's water testing results.

COLLECTION DATE	CONTAMINANT	MINIMUM LEVEL	MAXIMUM LEVEL	MCL	MCLG	UNIT OF MEASURE	LIKELY SOURCE OF CONTAMINATION
2-7-2011	Arsenic	2.8	2.9	10	0	ppb	Erosion of natural deposits; runoff from orchards; runoff from glass and electronic production wastes.
2-7-2011	Barium	0.163	0.204	2	2	ppm	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
2-7-2011	Fluoride	0.44	0.95	4	4	ppm	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
2-7-2011	Nitrate	ND	0.06	10	10	ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.

### RADIOACTIVE CONTAMINANTS

COLLECTION DATE	RADIOACTIVE CONTAMINANT	HIGHEST LEVEL	RANGE OF LEVELS	MCLG	MCL	UNIT OF MEASURE	VIOLATION	LIKELY SOURCE OF CONTAMINATION
2-7-2011	Gross Alpha Excluding Radon & Uranium	9.8	ND - 9.8	0	15	pCi/L	No	Erosion of natural deposits.
2-7-2011	Combined Radium 226/228	3.1	0.79 - 3.1	0	5	pCi/L	No	Erosion of natural deposits.
2-7-2011	Beta/Proton Emitters	7.4	0 - 7.4	0	50	pCi/L	No	Decay of natural & manmade deposits.

### DISINFECTANTS AND DISINFECTANT BY-PRODUCTS

YEAR	DISINFECTANT / BYPRODUCT	MINIMUM LEVEL	MAXIMUM LEVEL	MRDLG	MRDL	UNIT OF MEASURE	SOURCE OF DISINFECTANT
2011	Chlorine Residual, Free	0.75	2.14	<4	4	ppm	Disinfectant used to control microbes.
5-8-2011	Trihalomethane Total	ND	3.9	NA	80	ppb	By product of drinking water chlorination.

**Unregulated Initial Distribution System Evaluation of Disinfection Byproducts:**  
WAIVED OR NOT YET SAMPLED

**Organic Contaminants:** TESTING WAIVED, NOT REPORTED, OR NONE DETECTED  
**Not Required:** TURBIDITY

**Unregulated Contaminants:** NOT REPORTED, OR NONE DETECTED

### LEAD AND COPPER

The 90th percentile score for lead and copper indicates the measure, in parts per billion, that 90% of the homes sampled are at or below.

YEAR	CONTAMINANT	THE 90TH PERCENTILE	NUMBER OF SITES EXCEEDING ACTION LEVEL	ACTION LEVEL	UNIT OF MEASURE	SOURCE OF CONTAMINANT
2009	Lead	1.7	0	15	ppb	Corrosion of household plumbing systems; erosion of natural deposits.
2009	Copper	0.451	0	1.3	ppm	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.

The City has participated in the second cycle of the (2008) Unregulated Contaminant Monitoring Regulation (UCMR2). Our sampling did not show any positive results for contaminants tested by the USEPA. Data is available for your review at 111 Gillingham Lane, Sugar Land, Texas 77478.

### MICROBIOLOGICAL CONTAMINANTS - COLIFORM BACTERIA

YEAR	MCLG	TOTAL MCL	HIGHEST NO. OF POSITIVE	TOTAL NO. OF POSITIVE E.COLI OR FECAL COLIFORM SAMPLES	VIOLATION	SOURCE OF CONTAMINATION
2011	0	5% of monthly samples are positive	1.1%	0	No	Naturally present in the environment

# DEFINITIONS AND ABBREVIATIONS OF CONTAMINANTS

## CUSTOMER SERVICE IS OUR NUMBER ONE PRIORITY

We take pride in the water that is provided to our customers and we are continually striving to improve our service to you. To accomplish this goal, we need your help. Any time you find your water quality or service response is below your expectations, please contact us at 281-275-2450. We will respond promptly and professionally.



For more information about this report or to participate in future public meetings concerning our drinking water please call us at 281-275-2450. Sugar Land City Council meets regularly at 5:30 p.m. on the 1st, 3rd and 4th Tuesday of the month.

## EN ESPAÑOL

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

## DEFINITIONS

### ACTION LEVEL (AL)

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

### 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.

### 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

## ABBREVIATIONS

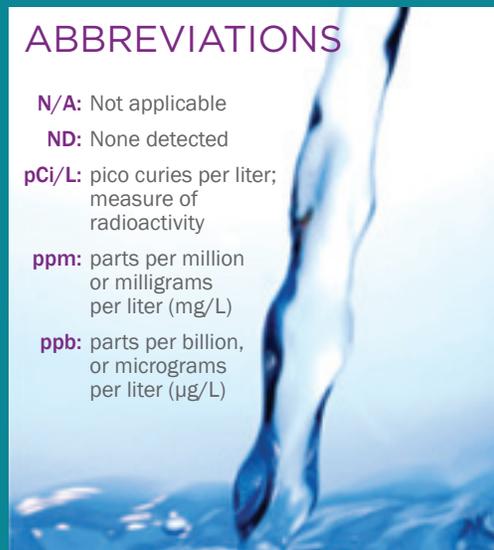
**N/A:** Not applicable

**ND:** None detected

**pCi/L:** pico curies per liter; measure of radioactivity

**ppm:** parts per million or milligrams per liter (mg/L)

**ppb:** parts per billion, or micrograms per liter (µg/L)



**CITY OF SUGAR LAND**

Utilities Department

111 Gillingham

Sugar Land, TX 77478

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