

# **WATER QUALITY REPORT 2021**



**HOUSTON  
PUBLIC WORKS**

# HOUSTON WATER QUALITY REPORT | JAN - DEC 2021

The U.S. Environmental Protection Agency (EPA) requires that all drinking water suppliers provide a Drinking Water Quality Report to their customers on an annual basis.

This annual water quality report includes important information regarding drinking water. For assistance in English, please call 311.

Este reporte incluye información importante sobre el agua para tomar. Para asistencia en español, favor de llamar al 311.

Bảng Báo Cáo Chất Lượng Nước hàng năm này cung cấp thông tin về nước uống. Để được trợ giúp bằng tiếng Việt, xin vui lòng gọi số 311.

Ce rapport annuel sur la Qualité de l'Eau fournit des informations sur l'eau potable. Pour de l'assistance en français, appelez le 311.

ب لاصتلا ءاجرلا ،تبيير علا ءغلاب ءدعاسملل .برشلا هايم صخت تامولعم نلع يوتحي هايملا ءدوج ريرقت 311

這份「水質年度報告」提供飲用水方面的資訊。如需中文協助，請撥 311。

The City of Houston delivers drinking water of the highest quality through six community public water systems.

## CITY OF HOUSTON PUBLIC WATER SYSTEMS

**1** Main System | TX1010013

**2** Kingwood | TX1010348

**3** Willowchase | TX1011902

**4** District 73 | TX1011585

**5** District 82 | TX1011593

**6** Belleauwoods | TX1011594



## **WATER SOURCES**

Customers of Houston Water Main Public water system receive their drinking water from three surface water purification plants and 39 ground water plants. 16 additional groundwater plants provide for the remaining five Houston Public water systems: Kingwood, Willow Chase, District 73, District 82, and Belleau Woods. The City of Houston treats drinking water according to federal and state standards to remove harmful contaminants.

The sources of drinking water nationwide (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 can be polluted by animals or human activity.

Contaminants that may be present in source water include:

- microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- organic chemicals, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

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. The Food and Drug Administration establishes limits for contaminants in bottled water that must provide the same protection for public health.

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 concerns with taste, odor or color of drinking water, contact 311 or email [waterquality@houstontx.gov](mailto:waterquality@houstontx.gov).

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 the 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 (800.426.4791).

## **UNREGULATED CONTAMINANTS**

Unregulated contaminants do not have EPA-established drinking water standards. The purpose of monitoring these contaminants is to assist the EPA in determining if future regulation is warranted. The next round of UCMR sampling will be in 2023. For more information visit [epa.gov/dwucmr](https://epa.gov/dwucmr).

## **SPECIAL NOTICE**

**Some people may be more vulnerable 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. These people should seek advice about drinking water from a 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).**

## **ARSENIC**

Some of Houston's drinking water contains low levels of arsenic, which is below state and federal action levels. EPA's standard balances arsenic's possible health effects against the costs of removing it from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

## **LEAD**

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 in-home plumbing. The City of Houston is responsible for providing high quality drinking water but cannot control the variety of materials used in in-home plumbing components. When water in your home plumbing has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for one 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 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 (800.426.4791) or at [epa.gov/safewater/lead](https://epa.gov/safewater/lead). Houston Water is conducting a survey to offer free water testing for qualified homes that may have lead and copper pipes. Determine if you qualify for free lead and copper tap water testing at [surveymonkey.com/r/leadcopper](https://surveymonkey.com/r/leadcopper).

## **WATER LOSS**

The Infrastructure Leak Index (ILI) measures the efficiency of water loss control efforts. It is calculated by taking the real losses (water lost due to leaks) and dividing them by the unavoidable real losses, the theoretical level of minimum leakage calculated by American Water Works Association Standards. Houston Water's ILI is based on the combination of all six community public water systems. In 2021, Houston Water's ILI was 7.03.

## **PUBLIC PARTICIPATION**

There are many opportunities for public participation. Information on Houston City Council meetings is available at [houstontx.gov/citysec](https://houstontx.gov/citysec).

To find out more about Houston Water Education & Outreach visit <https://www.publicworks.houstontx.gov/waterconservation> or <https://www.publicworks.houstontx.gov/protect-our-pipes>.

## **CONTACT US**

Questions about this report or your water quality? Please email [waterquality@houstontx.gov](mailto:waterquality@houstontx.gov) or call 311 (713.837.0311) and ask to speak with a member of the Water Quality team.

# MAIN SYSTEM | TX1010013

Ground Water

11%



Surface Water  
89%



## SURFACE WATER SOURCE

San Jacinto River (Lake Conroe & Lake Houston)

Trinity River (Lake Livingston)



## GROUND WATER SOURCE

103 Wells (Evangeline & Chicot Aquifers)  
at depths greater than 750 feet



## AVERAGE DAILY WATER PRODUCED

435.4M gallons



## CUSTOMERS

2.2M

Parameter/Substance (units) (sampled in 2021 unless noted)	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Detections		
			Minimum	Average	Maximum
<b>MONITORED AT WATER PLANTS</b>					
Arsenic <sup>1</sup> (ppb)	10	0	ND	1.8	5.3
Atrazine (ppb)	3	3	ND	0.1	0.6
Barium (ppm)	2	2	0.04	0.13	0.35
Combined Radium (pCi/L)	5	0	ND	1.3	2.5
Combined Uranium (ppb)	30	0	ND	2	11
Cyanide (ppb)	200	200	ND	54	140
Di(2-ethylhexyl)phthalate (ppb)	6	0	ND	0.1	2
Ethylbenzene (ppb)	700	700	ND	0.1	1
Fluoride (ppm)	4	4	ND	0.2	0.4
Gross Alpha (pCi/L)	15	0	ND	6.9	15.1 <sup>2</sup>
Gross Beta (pCi/L)	50	0	ND	1	7
Nitrate (ppm)	10	10	ND	0.2	0.6
Selenium (ppb)	50	50	ND	0.3	4.5
Simazine (ppb)	4	4	ND	0.02	0.1
Toluene (ppb)	1,000	1,000	ND	0.04	1
Turbidity (NTU)	(TT) 95% of monthly samples ≤ 0.3 NTU	NA	Lowest Monthly Percentage ≤ 0.3 NTU: 98.9% Highest Single Measurement: 0.49 NTU		
Turbidity has no health effects; however, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.					
Xylenes, Total (ppb)	10,000	10,000	ND	0.3	5
<b>MONITORED IN DISTRIBUTION SYSTEM</b>					
Chloramines (Disinfectant) (ppm)	4.0 (MRDL)	<4.0 (MRDLG)	0.05	3.1	4.65
Haloacetic Acids (ppb)	Yearly Average (LRAA) <60	NA	Highest LRAA: 27 ppb Individual sample results range from not detected to 34 ppb.		
Total Trihalomethanes (ppb)	Yearly Average (LRAA) <80	NA	Highest LRAA: 38 ppb Individual sample results range from not detected to 52 ppb.		
<b>MONITORED AT CUSTOMER TAP</b>					
Lead (ppb)	AL = 90% below 15 ppb	0	90% below 3.4 ppb Three samples above 15 ppb		
Copper (ppm)	AL = 90% below 1.3 ppm	1.3	90% below 0.1 ppm No samples above 1.3 ppm		

# MAIN SYSTEM | TX1010013

SECONDARY STANDARDS				
Parameter/Substance (units)	Recommended Levels (SMCL)	Detections		
		Minimum	Average	Maximum
Aluminum (ppm)	0.2	ND	0.1	1.6
Chloride (ppm)	250	22	42	174
Copper (ppm)	1	ND	0.01	0.08
Fluoride (ppm)	2	ND	0.2	0.4
Iron (ppm)	0.3	ND	0.1	1
Manganese (ppm)	0.05	ND	0.01	0.07
pH (su)	6.5 - 8.5	6.6	7.7	9.7
Sulfate (ppm)	250	5	22	44
Total Dissolved Solids (ppm)	500	75	243	480
Total Hardness as CaCO <sub>3</sub> (ppm)	NA	38	127	215
Zinc (ppm)	5	ND	0.01	0.07
UNREGULATED CONTAMINANTS <sup>3</sup>				
Parameter/Substance (units)	Dates Monitored	Minimum	Average	Maximum
O-Toluidine (ppb)	Jan – Dec 2019	ND	0.01	0.01
Germanium (ppb)	Jan – Dec 2019	ND	0.6	2
Manganese (ppb)	Jan – Dec 2019	ND	8	49
Bromide (ppb)	Jan – Dec 2019	ND	228	3130
HAA5 (ppb)	Jan – Dec 2019	0.35	30	76
HAA6Br (ppb)	Jan – Dec 2019	ND	7	13
HAA9 (ppb)	Jan – Dec 2019	0.35	36	81
Total Organic Carbon (ppb)	Jan – Dec 2019	ND	6790	18800
Anatoxin-A (ppb)	Jan – Dec 2019	ND	0.13	0.40

## Notes

- 1 For more background information regarding Arsenic – please refer to page 4.
- 2 One Gross Alpha result was above the 15 (pCi/L) MCL in 2021. This sample point has increased to quarterly sampling for four (4) consecutive quarters.
- 3 For more information regarding Unregulated Contaminants – please refer to page 4.

# Kingwood | TX1010348



Ground Water  
100%



## GROUND WATER SOURCE

16 Wells (Evangeline & Chicot Aquifers)  
at depths greater than 750 feet



## AVERAGE DAILY WATER PRODUCED

6.83M gallons



## CUSTOMERS

79.8K

Parameter/Substance (units) (sampled in 2021 unless noted)	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Detections		
			Minimum	Average	Maximum
<b>MONITORED AT WATER PLANTS</b>					
Arsenic (ppb) <sup>1</sup> 2020 <sup>2</sup>	10	0	ND	0.9	2
Barium (ppm) 2020 <sup>2</sup>	2	2	0.25	0.28	0.35
Combined Uranium (ppb) 2020 <sup>2</sup>	30	0	ND	0.8	2
Ethylbenzene (ppb)	700	700	ND	1	7
Fluoride (ppm) 2020 <sup>2</sup>	4	4	0.11	0.13	0.15
Gross Alpha (pCi/L) 2020 <sup>2</sup>	15	0	3	3.2	3.3
Nitrate (ppm)	10	10	ND	0.02	0.08
Toluene (ppb)	1,000	1,000	ND	0.8	3.8
Xylenes, Total (ppb)	10,000	10,000	ND	9	44
<b>MONITORED IN DISTRIBUTION SYSTEM</b>					
Chlorine (Disinfectant) (ppm)	4.0 (MRDL)	<4.0 (MRDLG)	1	1.4	2.4
Haloacetic Acids (ppb)	Yearly Average (LRAA) <60	NA	Highest LRAA: 3 ppb. Individual sample results range from not detected to 7.6 ppb.		
Total Trihalomethanes (ppb)	Yearly Average (LRAA) <80	NA	Highest LRAA: 9 ppb. Individual sample results range from not detected to 15.7 ppb.		
<b>MONITORED AT CUSTOMER TAP</b>					
Lead (ppb) 2020 <sup>2</sup>	AL = 90% below 15 ppm	0	90% below 3.85 ppb. Two samples above 15 ppb		
Copper (ppm) 2020 <sup>2</sup>	AL = 90% below 1.3 ppm	1.3	90% below 0.165 ppm. No sample above 1.3 ppm		
<b>SECONDARY STANDARDS</b>					
Parameter/Substance (units)	Recommended Levels (SMCL)	Detections			
		Minimum	Average	Maximum	
Chloride (ppm) 2020 <sup>2</sup>	250	19	22	28	
Fluoride (ppm) 2020 <sup>2</sup>	2	0.11	0.13	0.15	
Iron (ppm) 2020 <sup>2</sup>	0.3	ND	0.03	0.48	
Manganese (ppm) 2020 <sup>2</sup>	0.05	0.004	0.044	0.094	
pH (su) 2020 <sup>2</sup>	6.5 - 8.5	7.5	7.68	7.8	
Sulfate (ppm) 2020 <sup>2</sup>	250	4	9	12	
Total Dissolved Solids (ppm) 2020 <sup>2</sup>	500	192	209	240	
Copper (ppm) 2020 <sup>2</sup>	1	ND	0.03	0.14	
Total Hardness as CaCO <sub>3</sub> (ppm) 2020 <sup>2</sup>	NA	105	117	148	
Zinc (ppm) 2020 <sup>2</sup>	5	ND	0.04	0.17	

UNREGULATED CONTAMINANTS <sup>3</sup>				
Parameter/Substance (units)	Dates Monitored	Minimum	Average	Maximum
1-Butanol (ppb)	July 2018 - March 2019	ND	2	2
Germanium (ppb)	July 2018 - March 2019	ND	0.32	0.34
Manganese (ppb)	July 2018 - March 2019	3.7	26	49
Bromide	July 2018 - March 2019	24.2	53	162
HAA5	July 2018 - March 2019	ND	1	5
HAA6Br	July 2018 - March 2019	ND	0.8	2.4
HAA9	July 2018 - March 2019	ND	2	7

## Notes

- 1 For more background information regarding Arsenic – please refer to page 4.
- 2 Subject to reduced monitoring requirements. Detected contaminant within the past five years, in the year indicated.
- 3 For more information regarding Unregulated Contaminants – please refer to page 4.



Photo by Alex Perez

# Willow Chase | TX1011902



Ground Water  
100%



## GROUND WATER SOURCE

5 Wells (Evangeline & Chicot Aquifers)  
at depths greater than 750 feet



## AVERAGE DAILY WATER PRODUCED

2.5M gallons



## CUSTOMERS

13.3K

Parameter/Substance (units) (sampled in 2021 unless noted)	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Detections		
			Minimum	Average	Maximum
<b>MONITORED AT WATER PLANTS</b>					
Arsenic <sup>1</sup> (ppb)	10	0	ND	1.2	2.4
Barium (ppm)	2	2	0.23	0.24	0.24
Combined Uranium (ppb)	30	0	ND	1.8	3.6
Fluoride (ppm)	4	4	0.13 <sup>2</sup>		
Gross Alpha (pCi/L)	15	0	ND	2	4
Nitrate (ppm)	10	10	0.18	0.21	0.25
Selenium (ppb)	50	50	ND	2	3
Xylenes, Total (ppb)	10,000	10,000	ND	0.6	3
<b>MONITORED IN DISTRIBUTION SYSTEM</b>					
Chlorine (Disinfectant) (ppm)	4.0 (MRDL)	<4.0 (MRDLG)	0.8	1.4	2.9
Haloacetic Acids (ppb)	Yearly Average (LRAA) <60	NA	Highest LRAA: ND (not detected) Individual sample results were ND.		
Total Trihalomethanes (ppb)	Yearly Average (LRAA) <80	NA	Highest LRAA: 3 ppb Individual sample results range from not detected to 10 ppb		
<b>MONITORED AT CUSTOMER TAP</b>					
Lead (ppb) 2020 <sup>3</sup>	AL = 90% below 15 ppm	0	90% below 0 ppb Two samples above 15 ppb		
	AL = 90% below 1.3 ppm				
Copper (ppm) 2020 <sup>3</sup>	AL = 90% below 1.3 ppm	1.3	90% below 0.3 ppm No sample above 1.3 ppm		
	AL = 90% below 1.3 ppm				
<b>SECONDARY STANDARDS</b>					
Parameter/Substance (units)	Recommended Levels (SMCL)	Detections			
		Minimum	Average	Maximum	
Aluminum (ppm)	0.2	ND	0.01	0.02	
Chloride (ppm)	250	53 <sup>2</sup>			
Copper (ppm)	1	ND	0.001	0.002	
Fluoride (ppm)	2	0.13 <sup>2</sup>			
Iron (ppm)	0.3	ND	0.03	0.07	
Manganese (ppm)	0.05	ND	0.001	0.002	
pH (su)	6.5 - 8.5	7.8 <sup>2</sup>			
Sulfate (ppm)	250	6 <sup>2</sup>			
Total Dissolved Solids (ppm)	500	280 <sup>2</sup>			
Total Hardness as CaCO <sub>3</sub> (ppm)	NA	164	171	178	

## UNREGULATED CONTAMINANTS<sup>4</sup>

Parameter/Substance (units)	Dates Monitored	Minimum	Average	Maximum
Manganese	April - October 2018	ND	0.8	0.8
Bromide	April - October 2018	113	160	191
HAA5	April - October 2018	ND	0.1	0.6
HAA6Br	April - October 2018	ND	0.3	1.1
HAA9	April - October 2018	ND	0.4	1.1

### Notes

- 1 For more background information regarding Arsenic – please refer to page 4.
- 2 Only one sample was required to be taken for this analyte in the year indicated.
- 3 Subject to reduced monitoring requirements. Detected contaminant within the past five years, in the year indicated.
- 4 For more information regarding Unregulated Contaminants – please refer to page 4.



Photo by Ethan Sykes

# District 73 | TX1011585



Ground Water  
100%



## GROUND WATER SOURCE

2 Wells (Evangeline & Chicot Aquifers)  
at depths greater than 750 feet



## AVERAGE DAILY WATER PRODUCED

381K gallons



## CUSTOMERS

6K

Parameter/Substance (units) (sampled in 2021 unless noted)	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Detections		
			Minimum	Average	Maximum
<b>MONITORED AT WATER PLANTS</b>					
Barium (ppm) 2020 <sup>1</sup>	2	2	0.2 <sup>2</sup>		
Combined Uranium (ppb) 2020 <sup>1</sup>	30	0	4 <sup>2</sup>		
Fluoride (ppm) 2020 <sup>1</sup>	4	4	0.2	0.2	0.2
Gross Alpha (pCi/L) 2020 <sup>1</sup>	15	0	3 <sup>2</sup>		
Xylenes, Total (ppb)	10,000	10,000	ND	0.5	1
<b>MONITORED IN DISTRIBUTION SYSTEM</b>					
Chlorine (Disinfectant)	4.0 (MRDL)	<4.0 (MRDLG)	0.6	1.5	2
Haloacetic Acids (ppb)	Yearly Average (LRAA) <60	NA	Highest LRAA: ND (not detected) Individual sample results were ND.		
Total Trihalomethanes (ppb)	Yearly Average (LRAA) <80	NA	Highest LRAA: ND (not detected) Individual sample results were ND.		
<b>MONITORED AT CUSTOMER TAP</b>					
Lead (ppb)	AL = 90% below 15 ppb	0	90% below 0 ppb. No sample above 15 ppb.		
Copper (ppm)	AL = 90% below 1.3 ppm	1.3	90% below 0.075 ppm. One sample above 1.3 ppm		
<b>SECONDARY STANDARDS</b>					
Parameter/Substance (units)	Recommended Levels (SMCL)	Detections			
		Minimum	Average	Maximum	
Chloride (ppm) 2020 <sup>1</sup>	250	18	19	20	
Copper (ppm)	1	ND	0.04	0.18	
Fluoride (ppm) 2020 <sup>1</sup>	2	0.2	0.2	0.2	
Iron (ppm) 2020 <sup>1</sup>	0.3	0.089 <sup>2</sup>			
Manganese (ppm) 2020 <sup>1</sup>	0.05	0.026 <sup>2</sup>			
pH (su) 2020 <sup>1</sup>	6.5 - 8.5	7.7	7.8	7.9	
Sulfate (ppm) 2020 <sup>1</sup>	250	4	4.5	5	
Total Dissolved Solids (ppm) 2020 <sup>1</sup>	500	179	181	183	
Total Hardness as CaCO <sub>3</sub> (ppm) 2020 <sup>1</sup>	NA	79.3 <sup>2</sup>			

### Notes

- 1 Subject to reduced monitoring requirements. Detected contaminant within the past five years, in the year indicated.
- 2 Only one sample was required to be taken for this analyte in the year indicated.

# District 82 | TX1011593



Ground Water  
100%



## GROUND WATER SOURCE

102 Wells (Evangeline & Chicot Aquifers)  
at depths greater than 750 feet



## AVERAGE DAILY WATER PRODUCED

86K gallons



## CUSTOMERS

951

Parameter/Substance (units) (sampled in 2021 unless noted)	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Detections		
			Minimum	Average	Maximum
<b>MONITORED AT WATER PLANTS</b>					
Barium (ppm)	2	2		0.2 <sup>1</sup>	
Combined Radium (pCi/L)	5	0		1.5 <sup>1</sup>	
Nitrate (ppm)	10	10		0.2 <sup>1</sup>	
<b>MONITORED IN DISTRIBUTION SYSTEM</b>					
Chlorine (Disinfectant)	4.0 (MRDL)	<4.0 (MRDLG)	1.02	1.42	1.93
Haloacetic Acids (ppb)	Yearly Average (LRAA) <60	NA	Highest LRAA: 2 ppb. Individual sample results range from 1 ppb to 2 ppb.		
Total Trihalomethanes (ppb)	Yearly Average (LRAA) <80	NA	Highest LRAA: 15 ppb. Individual sample results range from 3 to 15 ppb.		
<b>MONITORED AT CUSTOMER TAP</b>					
Lead (ppb) 2019 <sup>2</sup>	AL = 90% below 15 ppb	0	90% below 3.5 ppb. No sample above 15 ppb		
Copper (ppm) 2019 <sup>2</sup>	AL = 90% below 1.3 ppm	1.3	90% below 0.12 ppm. No sample above 1.3 ppm		
<b>SECONDARY STANDARDS</b>					
Parameter/Substance (units)	Recommended Levels (SMCL)	Detections			
		Minimum	Average	Maximum	
Chloride (ppm)	250		16 <sup>1</sup>		
Copper (ppm)	1		0.003 <sup>1</sup>		
Iron (ppm)	0.3		0.04 <sup>1</sup>		
Manganese (ppm)	0.05		0.001 <sup>1</sup>		
pH (su)	6.5 - 8.5		7.7 <sup>1</sup>		
Sulfate (ppm)	250		2 <sup>1</sup>		
Total Dissolved Solids (ppm)	500		178 <sup>1</sup>		
Total Hardness as CaCO <sub>3</sub> (ppm)	NA		102 <sup>1</sup>		
Zinc (ppm)	5		0.04 <sup>1</sup>		

## Notes

**1** Only one sample was required to be taken for this analyte in the year indicated.

**2** Subject to reduced monitoring requirements. Detected contaminant within the past five years, in the year indicated.

\*February 14-15<sup>th</sup>, 2021 an Emergency Backup connection with the Commons Water Supply (TX1012978) system was opened to augment water supply during winter storm Uri.

# Belleau Wood | TX1011594



Purchased from City of Humble  
100%

## MIXED SURFACE WATER & GROUND WATER SOURCES



## AVERAGE DAILY WATER PRODUCED

165K gallons



## CUSTOMERS

396

Parameter/Substance (units) (sampled in 2021 unless noted)	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Detections		
			Minimum	Average	Maximum
<b>MONITORED AT WATER PLANTS</b>					
Arsenic <sup>1</sup> (ppb) 2020 <sup>2</sup>	10	0	ND	1.8	7.4
Atrazine (ppb)	3	3	ND	0.02	0.11
Barium (ppm) 2020 <sup>2</sup>	2	2	0.13	0.29	0.35
Combined Radium (pCi/L) 2020 <sup>2</sup>	5	0	ND	1.6	3.8
Cyanide (ppb) 2020 <sup>2</sup>	200	200	ND	10	50
Fluoride (ppm) 2020 <sup>2</sup>	4	4	0.13	0.18	0.23
Gross Alpha (pCi/L) 2020 <sup>2</sup>	15	0	3	4	5
Gross Beta (pCi/L) 2020 <sup>2</sup>	50	0	ND	2	5
Nitrate (ppm)	10	10	ND	0.1	0.4
Selenium (ppb) 2020 <sup>2</sup>	50	50	ND	1	4
Simazine (ppb)	4	4	ND	0.01	0.07
<b>MONITORED IN DISTRIBUTION SYSTEM</b>					
Chloramines (Disinfectant)	4.0 (MRDL)	<4.0 (MRDLG)	0.6	1.71	4
Haloacetic Acids (ppb)	Yearly Average (LRAA) <60	NA	Highest LRAA: 13 ppb. Individual sample result was 13 ppb.		
Total Trihalomethanes (ppb)	Yearly Average (LRAA) <80	NA	Highest LRAA: 13 ppb. Individual sample result was 13 ppb.		
<b>MONITORED AT CUSTOMER TAP</b>					
Lead (ppb) 2019 <sup>2</sup>	AL = 90% below 15 ppb	0	90% below 0 ppb. No sample above 15 ppb		
Copper (ppm) 2019 <sup>2</sup>	AL = 90% below 1.3 ppm	1.3	90% below 0.36 ppm. No sample above 1.3 ppm		
<b>SECONDARY STANDARDS</b>					
Parameter/Substance (units)	Recommended Levels (SMCL)	Detections			
		Minimum	Average	Maximum	
Chloride (ppm) 2020 <sup>2</sup>	250	31	39.4	49	
Copper (ppm) 2020 <sup>2</sup>	1	ND	0.002	0.004	
Fluoride (ppm) 2020 <sup>2</sup>	2	0.1	0.2	0.2	
Iron (ppm) 2020 <sup>2</sup>	0.3	0.01	0.03	0.04	
Manganese (ppm) 2020 <sup>2</sup>	0.05	0.001	0.003	0.009	
pH (su) 2020 <sup>2</sup>	6.5 – 8.5	7.3	7.72	7.9	
Sulfate (ppm) 2020 <sup>2</sup>	250	8	11	16	
Total Dissolved Solids (ppm) 2020 <sup>2</sup>	500	189	256	288	
Total Hardness as CaCO <sub>3</sub> (ppm) 2020 <sup>2</sup>	NA	73	114	138	
Zinc (ppm) 2020 <sup>2</sup>	5	ND	0.05	0.19	

### Notes

- 1 For more background information regarding Arsenic – please refer to page 4.
- 2 Subject to reduced monitoring requirements. Detected contaminant within the past five years, in the year indicated.

## CONTAMINANT SOURCES

Arsenic	erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Atrazine	runoff from herbicide used on row crops
Barium	discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chlorine & Chloramines	water additives used to control microbes
Combined Radium	erosion of natural deposits
Combined Uranium	erosion of natural deposits
Copper	corrosion of household plumbing systems; erosion of natural deposits
Cyanide	discharge from steel/metal factories; discharge from plastic and fertilizer factories
Ethylbenzene	discharge from petroleum refineries
Fluoride	erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Gross Alpha	erosion of natural deposits
Gross Beta	decay of natural and man-made deposits
Lead	corrosion of household plumbing systems; erosion of natural deposits
Nitrate / Nitrite	runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium	discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Simazine	herbicide runoff
Toluene	discharge from petroleum factories
Total Haloacetic Acids (HAAs)	by-product of drinking water disinfection
Total Trihalomethanes (TTHMs)	by-product of drinking water disinfection
Turbidity	soil runoff
Xylenes	discharge from petroleum factories; discharge from chemical factories

## DEFINITIONS AND ABBREVIATIONS

AL	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
HAA5	Dibromoacetic acid, dichloroacetic acid, monobromoacetic acid, monochloroacetic acid, trichloroacetic acid
HAA6Br	Bromochloroacetic acid, bromodichloroacetic acid, dibromoacetic acid, dibromochloroacetic acid, monobromoacetic acid, tribromoacetic acid
HAA9	Bromochloroacetic acid, bromodichloroacetic acid, chlorodibromoacetic acid, dibromoacetic acid, dichloroacetic acid, monobromoacetic acid, monochloroacetic acid, tribromoacetic acid, trichloroacetic acid
Level 1 Assessment	A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria were found.
Level 2 Assessment	A Level 2 assessment is 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.
LRAA	Locational Running Annual Average - average of results taken at specific monitoring location during previous four quarters
MCL	Maximum Contaminant Level - highest level of a contaminant allowed. MCLs are set as close to MCLGs using best available treatment technology
MCLG	Maximum Contaminant Level Goal - level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety
MRDL	Maximum Residual Disinfectant Level - highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants
MRDLG	Maximum Residual Disinfectant Level Goal - level of drinking water disinfectant below known or expected health risk. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants
NA	Not Applicable
ND	Not Detected
NTU	Nephelometric Turbidity Units
pCi/L	Pico Curies per liter (measure of radioactivity)
ppb	Parts Per Billion or micrograms per liter (µg/L)
ppm	Parts Per Million or milligrams per liter (mg/L)
SMCL	Secondary Maximum Contaminant Limit - National Secondary Drinking Water Standards are non-enforceable guidelines regulating contaminants that may cause cosmetic or aesthetic effects in drinking water. The EPA recommends secondary standards but does not require systems to comply with limits
TT	Treatment Technique - required process intended to reduce the level of a contaminant in drinking water
Turbidity	A measure of clarity of drinking water

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