

Houston Water Quality Report | January - December 2016

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

Houston Main System
Willowchase

Kingwood Utility District 5
District 82

District 73
Belleauwoods

Houston's drinking water met all national and state water quality standards and is SAFE. 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.

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.

311 ب لاصتالاء اجرلا، ءيبر علا ءلللاب ءءاسم لل. برشلا ءايم صخت تامول عم ىل ع يوتحي ءايملا ءءوج ريرقت

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。

City of Houston Community Public Water Systems

1 Main System | TX1010013

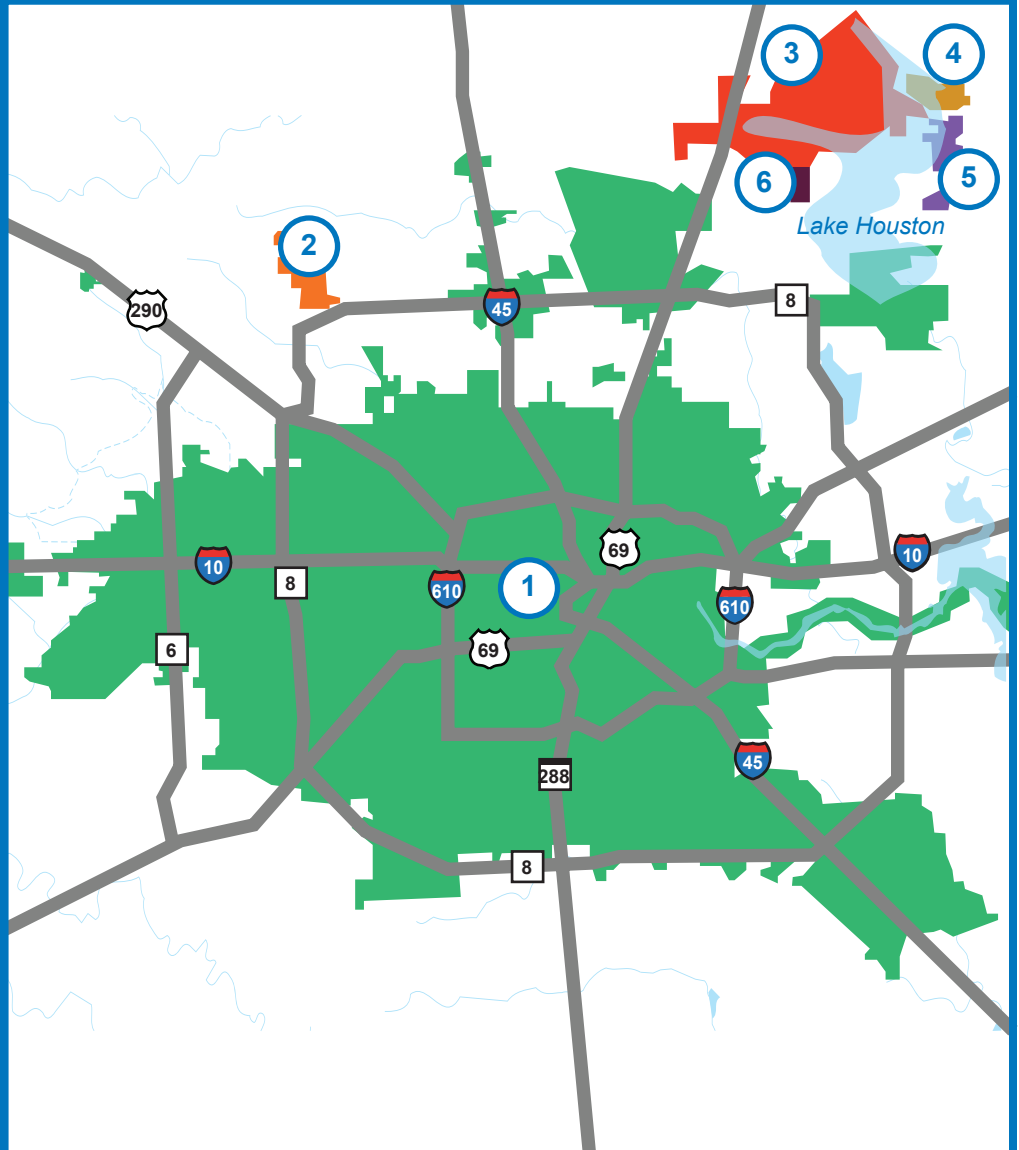
2 Willowchase | TX1011902

3 Kingwood | TX1010348

4 District 82 | TX1011593

5 District 73 | TX1011585

6 Belleauwoods | TX1011594



PUBLIC PARTICIPATION

There are many opportunities for public participation. Information on Houston City Council meetings is available at: houstontx.gov/citysec. To find out more about Houston Water Education & Outreach visit:

www.publicworks.houstontx.gov/pud/conservation.html

WATER SOURCES

Customers of Houston Water Main System receive their drinking water from three water purification plants and 40 ground water plants. 16 additional groundwater plants provide for the remaining 5 Houston Water Systems. The City of Houston treats the water according to federal and state standards to remove any possible harmful contaminants.

The sources of drinking water nationwide 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 the source water include:

- **microbial contaminants**, such as viruses and bacteria,
- **inorganic contaminants**, such as salts and metals,
- **pesticides and herbicides**, which may come from agriculture, storm water run-off, and residential uses,
- **organic chemicals**, from industrial or petroleum use, and
- **naturally-occurring radioactive materials**.

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. The EPA recommends a set of Secondary Standards, which are non-enforceable guidelines for water aesthetics. Secondary Standards data is provided for each system in this report. For concerns with taste, odor or color of drinking water, contact 311 or email 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 EPA in determining if future regulation is warranted. The Main System and Kingwood System have participated in Unregulated Contaminant Monitoring in the past 5 years. For more information visit

<http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr>

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)

CHROMIUM-6

The EPA and Texas Commission on Environmental Quality (TCEQ) have not established a standard for chromium-6 and Houston does not test for it separate from testing for total chromium levels. However, it is important to note the results of testing showed the levels for total chromium are below the enforceable level established by the State of California for chromium-6 of 10 parts per billion.

LEAD

There is NO lead in Houston's treated drinking water. As of 2016, Houston's water is below the state and federal action levels for lead and copper for all required sampling periods and has met all standards. Some common sources of lead can include: pipes, solder, plumbing fixtures, faucets and pipe fittings. Information on lead in drinking water, testing methods, health concerns, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (800-426-4791) or www.epa.gov/safewater/lead.

DRINKING WATER REGULATIONS

Houston Water was in full compliance with the current TCEQ and the EPA national primary drinking water regulations during the 12-month period covered by this report, and we continue to be in compliance.

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. In 2016, Houston Water's ILI was 7.47.

Main System | TX1010013

Average Water Produced Daily	435 Million Gallons	Number of Customers	2.3 Million
Surface Water	85%	Groundwater	15%
Surface Water Source	San Jacinto River (Lake Conroe & Lake Houston); Trinity River (Lake Livingston)		
Groundwater Source	100 wells (Evangeline & Chicot Aquifers) at depths greater than 750 feet		

Parameter/Substance (units) (Sampled in 2016 unless noted)	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	2016 Detections		
			Minimum	Average	Maximum

Monitored at Water Plants

Arsenic (ppb) ¹	10	0	ND	2	9
Combined Radium (pCi/L) 2015 ²	5	0	ND	1	3
Combined Uranium (ppb) 2015 ²	30	0	ND	1	8
Barium (ppm)	2	2	0.04	0.19	0.40
Cyanide (ppb)	200	200	ND	8	40
Fluoride (ppm)	4	4	ND	0.3	0.8
Gross Alpha (pCi/L) 2015 ²	15	0	ND	6	14
Gross Beta (pCi/L) 2015 ²	50	0	ND	2	6
Nitrate (ppm)	10	10	ND	0.2	0.8
Selenium (ppb)	50	50	ND	2	9
Atrazine (ppb)	3	3	ND	0.2	0.8
Simazine (ppb)	4	4	ND	0.02	0.13
Turbidity (NTU)	(TT) 95% of monthly samples ≤ 0.3 NTU	NA	Lowest Monthly Percentage ≤ 0.3 NTU; 95.2% Highest Single Measurement: 0.7 NTU		
Xylenes (ppm)	10	10	ND	0.0002	0.0022

Monitored in Distribution System

Chloramines (Disinfectant)	4.0 (MRDL)	< 4.0 (MRDLG)	0.03	2.10	4.00
Haloacetic Acids (ppb)	Yearly Average (LRAA) < 60	NA	Highest LRAA: 30.5 ppb Individual sample results range from <6.0 ppb (not detected) to 58.8 ppb.		
Total Trihalomethanes (ppb)	Yearly Average (LRAA) < 80	NA	Highest LRAA: 36.9 ppb Individual sample results range from < 4.0 ppb (not detected) to 60.3 ppb.		

Monitored at Customer Tap

Copper (ppm)	AL = 90% below 1.3 ppm	1.3	90% below 0.261 ppm One sample above 1.3 ppm at 1.92 ppm.		
Lead (ppb)	AL = 90% below 15 ppb	0	90% below 4 ppb One sample above 15 ppb at 26 ppb.		

Secondary Standards

Parameter/Substance (units)	Recommended Levels (SCL)	Minimum	Average	Maximum
Aluminum (ppm)	0.05 - 0.2	ND	0.1	1.9
Chloride (ppm)	250	16	34	56
Iron (ppm)	0.3	ND	0.1	1.4
Manganese (ppm)	0.05	ND	0.009	0.043
pH	6.5 - 8.5	7.5	7.8	8.6
Total Dissolved Solids (ppm)	500	116	243	334
Total Hardness as CaCO ₃ (ppm)	NA	92	138	199
Zinc (ppm)	5	ND	0.004	0.035

Unregulated Contaminants | 2013 - 2014

Unregulated Contaminant (Units)	Minimum	Average	Maximum
1,4-Dioxane (ppb)	ND	0.006	0.091
Bromochloromethane (ppb)	ND	0.001	0.120
Chlorate (ppb)	ND	31	515
Chromium (ppb)	ND	0.62	6.00
Cobalt (ppb)	ND	0.01	2.10
Hexavalent Chromium (ppb)	ND	0.7	6.7
Molybdenum (ppb)	ND	2	8
Strontium (ppb)	69	183	650
Vanadium (ppb)	ND	1.1	16

Table Key

NA = Not applicable	ppm = Parts per million or milligrams per liter (mg/L)	ppb = Parts per billion or micrograms per liter (µg/L)	pCi/L = Picocuries per liter (a measure of radioactivity)	NTU = Nephelometric Turbidity Units
ND = Not detected				
AL	Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.			
TT	Treatment Technique - A required process intended to reduce the level of a contaminant in water.			
MRDL	Maximum Residual Disinfectant Level - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.			
MRDLG	Maximum Residual Disinfectant Level Goal - 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 contaminants.			
LRAA	Locational Running Annual Average - The average of results taken at a specific monitoring location during the previous four quarters.			

*1 Arsenic - Houston's drinking water contains low levels of arsenic, but is below the 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.

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

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www.publicworks.houstontx.gov/wq2016

Past Water Quality Reports are online at:

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Willowchase | TX1011902

Average Water Produced Daily	2.3 Million Gallons	Number of Customers	13,500		
Groundwater Source	5 wells (Evangeline & Chicot Aquifers) at depths greater than 750 feet				
Parameter/Substance (units) (Sampled in 2016 unless noted)	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	2016 Detections		
			Minimum	Average	Maximum
Monitored at Water Plants					
Arsenic (ppb) ¹	10	0	2.2	2.3	2.4
Barium (ppm)	2	2	0.23	0.25	0.28
Combined Uranium (ppb) 2015 ²	30	0	1.7	2.7	3.6
Fluoride (ppm) 2015 ²	4	4	0.140		
Gross Alpha (pCi/L) 2015 ²	15	0	4.6	5.5	6.3
Nitrate (ppm)	10	10	0.19	0.22	0.26
Selenium (ppb)	50	50	ND	2.9	5.7
Monitored in Distribution System					
Chlorine (Disinfectant)	4.0 (MRDL)	<4.0 (MRDLG)	0.62	1.2	1.8
Monitored at Customer Tap					
Lead (ppb) 2014 ²	AL = 90% below 15 ppb (TT)	0	90% below 1.8 ppb No sample above 15 ppb		
Copper (ppm) 2014 ²	AL = 90% below 1.3 ppm (TT)	1.3	90% below 0.17 ppm No sample above 1.3 ppm		
Secondary Standards					
Parameter/Substance (units)	Recommended Levels (SCL)		Detection (results based on a single sample)		
Chloride (ppm) 2015 ²	250		55		
pH 2015 ²	6.5 – 8.5		7.5		
Total Dissolved Solids (ppm) 2015 ²	500		280		
Total Hardness as CaCO ₃ (ppm)	NA		172		
Table Key					
NA = Not applicable	ppm = Parts per million or milligrams per liter (mg/L)	ppb = Parts per billion or micrograms per liter (µg/L)	pCi/L = Picocuries per liter (a measure of radioactivity)	NTU = Nephelometric Turbidity Units	
ND = Not detected					
AL	Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.				
TT	Treatment Technique - A required process intended to reduce the level of a contaminant in water.				
MRDL	Maximum Residual Disinfectant Level - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.				
MRDLG	Maximum Residual Disinfectant Level Goal - 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 contaminants.				
*1 Arsenic - Houston's drinking water contains low levels of arsenic, but is below the 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.					
*2 Subject to reduced monitoring requirements. Detected contaminant within the past five years, in the year indicated.					

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Kingwood | TX1010348

Average Water Produced Daily	7.5 Million Gallons	Number of Customers	78,000
Groundwater Source	15 wells (Evangeline & Chicot Aquifers) at depths greater than 750 feet		

Parameter/Substance (units) (Sampled in 2016 unless noted)	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	2016 Detections		
			Minimum	Average	Maximum

Monitored at Water Plants

Parameter/Substance (units)	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Minimum	Average	Maximum
Arsenic (ppb) ¹ 2014 ²	10	0	ND	1.4	2.6
Barium (ppm) 2014 ²	2	2	0.26	0.27	0.28
Fluoride (ppm) 2014 ²	4	4	0.1	0.3	0.5
Nitrate (ppm)	10	10	ND	0.01	0.05
Gross Alpha (pCi/L) 2015 ²	15	0	2.5	2.7	2.8
Uranium (ppb) 2015 ²	30	0	ND	0.8	1.5

Monitored in Distribution System

Parameter/Substance (units)	Recommended Levels (SCL)	Minimum	Average	Maximum	
Chlorine (Disinfectant)	4.0 (MRDL)	<4.0 (MRDLG)	1.1	1.4	1.68
Haloacetic Acids (ppb)	Yearly Average (LRAA) < 60	NA	Highest LRAA: 2.7 Samples range from <4.0 (non-detect) to 5.8		
Total Trihalomethanes (ppb)	Yearly Average (LRAA) < 80	NA	Highest LRAA: 1.5 Sample range from <6.0 (not detected) to 2.9		

Monitored at Customer Tap

Parameter/Substance (units)	Recommended Levels (SCL)	Minimum	Average	Maximum	
Lead (ppb) 2014 ²	AL = 90% below 15 ppb (TT)	0	All lead samples were non-detect in 2014		
Copper (ppm) 2014 ²	AL = 90% below 1.3 ppm (TT)	1.3	90% below 0.0314 ppm. No sample above 1.3		

Secondary Standards

Parameter/Substance (units)	Recommended Levels (SCL)	Minimum	Average	Maximum
Chloride (ppm) 2014 ²	250	18	22.4	27
Iron (ppm) 2014 ²	0.3	ND	0.074	0.124
Manganese (ppm) 2014 ²	0.05	0.002	0.03	0.08
pH 2014 ²	6.5 – 8.5	7.4	8	8.4
Total Dissolved Solids (ppm) 2014 ²	500	180	201.6	221
Total Hardness as CaCO ₃ (ppm) 2014 ²	NA	101	119.4	132
Zinc (ppm) 2014 ²	5	ND	0.001	0.0052

Unregulated Contaminants | 2013 - 2014

Unregulated Contaminant (Units)	Min	Avg	Max	Unregulated Contaminant (Units)	Min	Avg	Max
Chromium (ppb) 2014 ⁽¹⁾	ND	0.0	1.2	Strontium (ppb) 2014 ⁽¹⁾	ND	191	350
Hexavalent Chromium (ppb) 2013 ⁽¹⁾	ND	0.3	1.2	Vanadium (ppb) 2013 ⁽¹⁾	ND	0.5	2.1
Molybdenum (ppb) 2014 ⁽¹⁾	ND	1.9	4.4				

Table Key

NA = Not applicable	ppm = Parts per million or milligrams per liter (mg/L)	ppb = Parts per billion or micrograms per liter (µg/L)	pCi/L = Picocuries per liter (a measure of radioactivity)	NTU = Nephelometric Turbidity Units
ND = Not detected				
AL	Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.			
TT	Treatment Technique - A required process intended to reduce the level of a contaminant in water.			
MRDL	Maximum Residual Disinfectant Level - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.			
MRDLG	Maximum Residual Disinfectant Level Goal - 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 contaminants.			
LRAA	Locational Running Annual Average - The average of results taken at a specific monitoring location during the previous four quarters.			

*1 Arsenic - Houston's drinking water contains low levels of arsenic, but is below the 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.

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

District 82 | TX1011593

Average Water Produced Daily	40,000 Gallons	Number of Customers	740
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Groundwater Source	2 wells (Evangeline Aquifer) at depths greater than 750 feet		
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Parameter/Substance (units) (Sampled in 2016 unless noted)	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	2016 Detections		
			Minimum	Average	Maximum

Monitored at Water Plants

Barium (ppm) 2015 ¹	2	2	0.2		
Fluoride (ppm) 2015 ¹	4	4	0.1		
Nitrate (ppm)	10	10	0.2		

Monitored in Distribution System

Chlorine (Disinfectant)	4.0 (MRDL)	<4.0 (MRDLG)	1.1	1.3	1.5
Haloacetic Acids (ppb) 2013 ¹	Yearly Average (LRAA) < 60	NA	2016 results ² Location 1 (DBP2-01): ND Location 2 (DBP2-02): 2.9 ppb		
Total Trihalomethanes (ppb) 2013 ¹	Yearly Average (LRAA) < 80	NA	2016 results ² Locatio1 (DBP2-01): 5.4 ppb Location 2 (DBP2-02): 18.8 ppb		

Monitored at Customer Tap

Lead (ppb)	AL = 90% below 15 ppb (TT)	0	90% below 4.0 ppb No sample above 15 ppb		
Copper (ppm)	AL = 90% below 1.3 ppm (TT)	1.3	90% below 0.231 ppm No sample above 1.3 ppm		

Secondary Standards

Parameter/Substance (units)	Recommended Levels (SCL)	Detection (results based on a single sample)
Chloride (ppm) 2015 ¹	250	15
pH (s.u.) 2015 ¹	6.5 – 8.5	7.9
Total Dissolved Solids (ppm) 2015 ¹	500	168
Total Hardness as CaCO ₃ (ppm) 2015 ¹	NA	110

Table Key

NA = Not applicable	ppm = Parts per million or milligrams per liter (mg/L)	ppb = Parts per billion or micrograms per liter (µg/L)	pCi/L = Picocuries per liter (a measure of radioactivity)	NTU = Nephelometric Turbidity Units
AL	Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.			
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MRDLG	Maximum Residual Disinfectant Level Goal - 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 contaminants.			
LRAA	Locational Running Annual Average - The average of results taken at a specific monitoring location during the previous four quarters.			

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

*2 District 82 is on a 3 year monitoring schedule for Haloacetic Acids and Total Trihalomethanes, with one sample taken at each of two locations. This is a reduced monitoring schedule, granted due to historically low detection levels for these contaminants.

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District 73 | TX1011585

Average Water Produced Daily	330,000	Number of Customers	4,400
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Groundwater Source	4 wells (Evangeline Aquifer) at depths greater than 750 feet		
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Parameter/Substance (units) (Sampled in 2016 unless noted)	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	2016 Detections		
			Minimum	Average	Maximum

Monitored at the Water Plants

Arsenic (ppb) ¹	10	0	2.9		
Barium (ppm)	2	2	0.2		
Fluoride (ppm) 2014 ²	4	4	0.16	0.17	0.17
Nitrate (ppm)	10	10	0.03		
Selenium (ppb)	50	50	11.6		
Xylenes (total)	10	10	ND	0.5	0.9
Gross Alpha (pCi/L) 2014 ²	15	0	6.5		
Combined Radium (pCi/L) 2014 ²	5	0	0.5		
Uranium (ppb) 2014 ²	30	0	3.5		

Monitored in the Distribution System

Chlorine (Disinfectant)	4.0 (MRDL)	<4.0 (MRDLG)	1.1	1.3	1.6
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Monitored at Customer Tap

Lead (ppb) 2014 ²	AL = 90% below 15 ppb (TT)	0	90% below 3.3 ppb No sample above 15 ppb		
Copper (ppm) 2014 ²	AL = 90% below 1.3 ppm (TT)	1.3	90% below 0.18 ppm No sample above 1.3 ppm		

Secondary Standards

Parameter/Substance (units)	Recommended Levels (SCL)	Detection (results based on a single sample)		
Chloride (ppm) 2014 ²	250	19	19	19
pH 2014 ²	6.5 – 8.5	7.4	7.45	7.5
Total Dissolved Solids (ppm) 2014 ²	500	161	165	169
Total Hardness as CaCO ₃ (ppm)	NA	100		

Table Key

NA = Not applicable	ppm = Parts per million or milligrams per liter (mg/L)	ppb = Parts per billion or micrograms per liter (µg/L)	pCi/L = Picocuries per liter (a measure of radioactivity)	NTU = Nephelometric Turbidity Units
ND = Not detected				
AL	Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.			
TT	Treatment Technique - A required process intended to reduce the level of a contaminant in water.			
MRDL	Maximum Residual Disinfectant Level - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.			
MRDLG	Maximum Residual Disinfectant Level Goal - 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 contaminants.			

*1 Arsenic - Houston's drinking water contains low levels of arsenic, but is below the 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.

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

Belleauwoods | TX1011594

Average Water Produced Daily	190,000 Gallons	Number of Customers	800
Water Sources	94% Purchased Water From City of Humble, TX 1010014 (Surface and Groundwater)		6% Groundwater from Belleauwoods Wells (2 wells at depths greater than 750 ft - Evangeline Aquifer)

Parameter/Substance (units) (Sampled in 2016 unless noted)	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Main System Detections		
			Minimum	Average	Maximum

Monitored at Water Plants

Parameter/Substance (units)	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Minimum	Average	Maximum
Barium (ppm) 2015 ¹	2	2	0.3		
Fluoride (ppm) 2014 ¹	4	4	0.2		
Nitrate (ppm)	10	10	0.02	0.20	0.37
Selenium (ppb) 2015 ¹	50	50	3.3		

Monitored in Distribution System

Parameter/Substance (units)	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Minimum	Average	Maximum
Chlorine (Disinfectant)	4.0 (MRDL)	<4.0 (MRDLG)	1.1	1.3	1.6
Haloacetic Acids (ppb) 2013 ¹	Yearly Average (LRAA) < 60	NA	Highest LRAA: 10.8 Individual sample results range from 2.3 to 18.6		
Total Trihalomethanes (ppb) 2013 ¹	Yearly Average (LRAA) < 80	NA	Highest LRAA: 19.5 Individual sample results range from 10.6 to 38.4		

Monitored at Customer Tap

Parameter/Substance (units)	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Minimum	Average	Maximum
Lead (ppb) 2015 ¹	AL = 90% below 15 ppb (TT)	0	90% below 5.0 One sample above 15 ppb at 19		
Copper (ppm) 2015 ¹	AL = 90% below 1.3 ppm (TT)	1.3	90% below 0.212 ppm No sample above 1.3 ppm		

Secondary Standards

Parameter/Substance (units)	Recommended Levels (SCL)	Detection (results based on a single sample)
Chloride (ppm) 2014 ¹	250	53
Iron (ppm) 2015 ¹	0.3	0.269
Manganese (ppm) 2015 ¹	0.05	0.0672
pH 2014 ¹	6.5 – 8.5	7.3
Total Dissolved Solids (ppm) 2014 ¹	500	251
Total Hardness as CaCO3 (ppm) 2015 ¹	NA	134

Table Key

NA = Not applicable	ppm = Parts per million or milligrams per liter (mg/L)	ppb = Parts per billion or micrograms per liter (µg/L)	pCi/L = Picocuries per liter (a measure of radioactivity)	NTU = Nephelometric Turbidity Units
ND = Not detected				
AL	Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.			
TT	Treatment Technique - A required process intended to reduce the level of a contaminant in water.			
MRDL	Maximum Residual Disinfectant Level - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.			
MRDLG	Maximum Residual Disinfectant Level Goal - 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 contaminants.			
LRAA	Locational Running Annual Average - The average of results taken at a specific monitoring location during the previous four quarters.			

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

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Contaminant Sources

Contaminant	Potential Sources
Arsenic	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
Asbestos	Erosion of natural deposits; corrosion of asbestos-cement water lines.
Atrazine	Runoff from herbicide used on row crops.
Barium	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Chlorine and 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.
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 / Nitrate	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, plastics, paint, and pharmaceutical manufacturing.
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.

Additional Definitions

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.
MCL	Maximum Contaminant Level - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology
MCLG	Maximum Contaminant Level Goal - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG allow a margin of safety
SCL	Secondary Contaminant Limit - National Secondary Drinking Water Standards are non-enforcable guidelines regulating contaminants that may cause cosmetic effects or aesthetic effects in drinking water. The EPA recommends secondary standards but does not require systems to comply with these limits.

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