

In 2016, your tap water met all U.S. Environmental Protection Agency (EPA) and state drinking water health standards. The Texas Commission on Environmental Quality (TCEQ) has established public water system ratings, and Richland Hills's water supply system received the highest achievable rating. Superior.

Where Do We Get Our Drinking Water?

Our drinking water is obtained from **GROUND AND SURFACE** water sources.

The surface water is purchased from The City of Fort Worth. Fort Worth uses water from Lake Worth, Eagle Mountain Lake, Lake Bridgeport, Richland Chambers Reservoir, Cedar Creek Reservoir, Lake Benbrook and the Clear Fork Trinity River. Fort Worth owns Lake Worth. The U.S. Army Corp of Engineers is responsible for Benbrook Lake. The other four lakes are owned and operated by Tarrant Regional Water District. The groundwater supply is from the Trinity and Paluxy aquifers and operated by Richland Hills. The average daily water consumption for Richland Hills is approximately one million gallons.

Information For Immuno-compromised People

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer under-going chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk for infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by microbial contaminants are available from the EPA's Safe Drinking Water Hotline 1-800-426-4791.

How Can I Get Involved?

By attending a Richland Hills City Council meeting on the 1st or 3rd Tuesday of each month at 7:00 p.m. in the council chambers at 3200 Diana Drive. If you have a question about Richland Hills' drinking water quality, or would like to schedule a meeting for your group or organization please call (817)616-3830.

En Español

Éste reporte incluye importante información sobre el agua potable. Si tiene preguntas ó comentarios sobre éste reporte, puede comunicarse con una representate bilinque al teléfono 817- 616-3830.

About The Following Information

The following information lists all the federally regulated or monitored contaminants which have been found in Richland Hills' drinking water in 2016. The U.S. EPA requires water systems to test for up to 100 contaminants and must meet 91 regulations for water safety and quality. The data included is from calendar 2016 unless otherwise indicated. In addition, because Richland Hills purchases much of its water from the City of Fort Worth, the levels are a compilation of both entities annual sampling results with the highest detected levels shown.

TCEQ Accesses Raw Water Supplies

The Texas Commission on Environmental Quality completed an assessment of the source water and the results indicate some sources are susceptible to certain contaminants based on human activities and natural conditions. TCEQ classified the risk to Fort Worth's source waters as high for most contaminants. High susceptibility means there are activities near the source water or watershed making it very likely those chemical constituents may come into contact with the source water. It does not mean that there are any health risks present. Tarrant Regional Water District, from which Fort Worth purchases its water, received the assessment reports. For more information on Fort Worth source water assessments and protection efforts, contact Stacy Walters at 817-392-8203.

The sampling requirements for our water system are based on this susceptibility and previous sample data. Detection of these contaminants will be found in this report. For more information on source water protection efforts at our system; contact us at 817-616-3830. Further details about the source water assessments are available at the following URL:

http://dww2.tceq.texas.gov/DWW/JSP/SWAP.jsp?tinwsys_is_number=5809&tinwsys_st_code=TX&wsnumber=TX2200022%20%20%20&DWWState=TX

Microorganism Testing Shows Low Detections In FW Water Sources

Tarrant Regional Water District monitors the raw water at all Fort Worth water intake sites for *Cryptosporidium*, *Giardia Lamblia* and viruses. The source is human and animal fecal waste in the watershed. The 2016 sampling showed low levels of *Cryptosporidium*, *Giardia Lamblia* and viruses that are common in surface water. The table below indicates when detections were found in each raw water source. *Cryptosporidium* and *Giardia Lamblia* monitoring is done monthly. Virus monitoring is performed four times a year in January, March, July and September. Viruses are treated through disinfection processes. *Cryptosporidium* and *Giardia Lamblia* are removed through a combination of disinfection and/or filtration.

Intake Location	<i>Cryptosporidium</i>	<i>Giardia Lamblia</i>	Adenovirus	Enterovirus	Astrovirus	Rotavirus
Richland-Chambers Reservoir	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected
Cedar Creek Lake	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected
Lake Benbrook	August	Not detected	January	Not detected	Not detected	Not detected
Eagle Mountain Lake	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected
Lake Worth	June	Not detected	January & September	Not detected	Not detected	Not detected
Clear Fork of Trinity River	May, June, August, September, November	June & August	January & March	Not detected	Not detected	Not detected



Why Are There Contaminants In My Drinking Water?

The sources of drinking water (both tap 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 include:

- Microbial contaminants, such as viruses, bacteria and protozoans that 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 stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides and herbicides that may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.
- Radioactive contaminants that 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, EPA prescribes regulations that limit the amount of certain contaminants in water provided by the public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water that must provide protection for public health.



Abbreviations Used In Tables:

- **Maximum Contaminant Level (MCL)** – the highest permissible level of a contaminant in drinking water, MCLs are set as close to the MCLG's as feasible using the best available treatment.
- **Maximum Contaminant Level Goal (MCLG)** – the level of a contaminant in drinking water below which there is no known or expected health risk. MCLG's allow for a margin of safety.
- **Maximum Residual Disinfectant Level Goal (MRDLG)** – the level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- **Maximum Residual Disinfectant Level (MRDL)** – 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.
- **Treatment Technique (TT)** – a required process intended to reduce the level of contaminants in drinking water.
- **Action Level (AL)** – the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **N/A** – not applicable
- **AVG** – Regulatory compliance with some MCL's are based on running annual average of monthly samples.
- **NTU** – Nephelometric Turbidity Units
- **MFL** – million fibers per liter (a measure of asbestos)
- **ppb** – parts per billion, or micrograms per liter ($\mu\text{g}/\text{L}$)
- **pCi/L** – picocuries per liter (a measure of radioactivity)
- **ppt** – parts per trillion, or nanograms per liter
- **ppm** – parts per million, or milligrams per liter (mg/L)
- **ppq** – parts per quadrillion, or picograms per liter



2016 Drinking Water Quality Test Results

Lead and Copper

Year	Contaminant	The 90 th Percentile	Number of Sites Exceeding Action Level	Action Level	Unit of Measure	Source of Contaminant
2016	Lead	0	0	0.015	mg/L	Corrosion of household plumbing systems, erosion of natural deposits
2016	Copper	0.3	0	1.3	mg/L	Corrosion of household plumbing systems, erosion of natural deposits, leaching from wood preservatives.

If present, elevated levels of lead can lead to 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 private plumbing. This water supply 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 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 <http://water.epa.gov/drink/info/lead/index.cfm>

Contaminant	Measure	MCL	2016 Highest single result	Lowest monthly % of samples ≤0.3 NTU	MCLG	Common Sources of Substance
Turbidity	NTU	TT	0.36	99.7%	N/A	Soil runoff

Turbidity is a measure of the cloudiness of water. It is monitored because it is a good indicator of the effectiveness of the filtration system in Fort Worth's water.

Contaminant	Measure	MCL	2016 Level	Range	MCLG	Common Sources of Substance
Total Coliforms (including fecal coliform & E. coli)	% of positive samples	Presence in 5% or less of monthly samples	No monthly samples tested positive	0	0	Coliforms are naturally present in the environment as well as feces; fecal coliforms and E. coli only come from human and animal fecal waste

Richland Hills' monthly tests found no total coliform bacteria in 2016

Maximum Residual Disinfectant Level

Year	Contaminant	Average Level	Minimum Level	Maximum Level	MRDL	MRDLG	Unit of Measure	Source of Contaminant
2016	Chloramines	1.64	0.50	4.0	4.0	4.0	ppm	Water additive used to control microbes
Contaminant		High	Low	Average	MCL		MCLG	Common Sources of Substance
Total Organic Carbon ₁		1	1	1	TT = % removal		N/A	Naturally occurring

Testing for Total Organic Carbon is used to determine disinfection by-product precursors. Fort Worth was in compliance with all monitoring and treatment technique requirements for disinfection by-product precursors.

Contaminant	Measure	MCL	2016 Level	Range	MCLG	Common Sources of Substance
Alpha particles ₁	pCi/L	15	2	2 to 2	N/A	Erosion of natural deposits of certain minerals that are radioactive and may emit forms of radiation known as alpha radiation
Beta particles & photon emitters ₁	pCi/L	50	7.5	2.8 to 7.5	N/A	Decay of natural and man-made deposits of certain minerals that are radioactive and may emit forms of radiation known as photon and beta radiation
Arsenic	ppb	10	1.40	0 to 1.40	0	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium	ppm	2	0.06	0.05 to 0.06	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium(Total)	ppb	100	0.73	0 to 0.73	100	Discharge from steel and pulp mills, erosion of natural deposits
Cyanide	ppb	200	80.3	0 to 80.3	200	Erosion of natural deposit
Fluoride	ppm	4	1.82	1.58 to 1.82	4	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Nitrate (measured as Nitrogen)	ppm	10	0.728	0.039 to 0.728	10	Runoff from fertilizer use/ leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (measured as Nitrogen)	ppm	1	0.03	0.01 to 0.03	1	Runoff from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Antimony	ppb	6	2	0 to 2	6	Discharge from petroleum refineries, fire retardants, ceramics, electronics, solder, test addition
Bromate	ppb	10	5.50	0 to 10.4	0	By-product of drinking water disinfection
Haloacetic Acids (HAA5)	ppb	60	14.7	1.9 to 14.7	N/A	By-product of drinking water disinfection
Total Trihalomethanes	ppb	80	15	5.81 to 15.00	N/A	By-product of drinking water disinfection

Because of historically low levels of radionuclides in Fort Worth's water, TCEQ monitoring is on a reduced schedule. The test results are from 2013 through 2014.

In the water loss audit submitted to the Texas Water Development Board for the time period of January 2016 to December 2016, our system lost an estimated 37,574,126 gallons. If you have any questions about the water loss audit, please call **(817)616-3830**.

Unregulated Disinfection By-products

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

Contaminant	Measure	Range of Detects	2016 Level	MCL	MCLG	Common Sources of Substance
Chloral Hydrate	ppb	0.53 to 0.93	0.93	Not regulated	None	<i>By-product of drinking water disinfection</i>
Bromoform	ppb	0 to 6.57	6.57	Not regulated	None	By-products of drinking water disinfection; not regulated individually; included in Total Trihalomethanes
Bromodichloromethane	ppb	0 to 3.65	3.65	Not regulated	None	
Chloroform	ppb	0 to 8.16	8.16	Not regulated	None	
Dibromochloromethane	ppb	1.2 to 4.13	4.13	Not regulated	None	
Monochloroacetic Acid	ppb	0 to 5.1	5.1	Not regulated	None	By-products of drinking water disinfection; not regulated individually; included in Haloacetic Acids
Dichloroacetic Acid	ppb	0 to 9.3	9.3	Not regulated	None	
Trichloroacetic Acid	ppb	0 to 1.2	1.2	Not regulated	None	
Monobromoacetic Acid	ppb	0 to 1.00	1.00	Not regulated	None	
Dibromoacetic Acid	ppb	<1.00 to 3	3	Not regulated	None	
Bromochloroacetic Acid	ppb	<1.00 to 3.60	3.60	Not regulated	None	

Secondary Constituents

These items do not relate to public health but rather to the aesthetic effects.

These items are often important to industry. Results are from the most recent testing.

Item	Measure	2016 Range
Bicarbonate	ppm	112 to 145
Calcium	ppm	41.1 to 58
Chloride	ppm	15.8 to 82.2
Conductivity @ 25C	µmhos/cm	322 to 396
pH	units	8.0 to 8.5
Magnesium	ppm	.824 to 5.86
Sodium	ppm	15.1 to 341
Sulfate	ppm	15.8 to 172
Total Alkalinity as CaCO ₃	ppm	16 to 145
Total Dissolved Solids	ppm	180 to 895
Total Hardness as CaCO ₃	ppm	90.8 to 164
Total Hardness in Grains	grains/gallon	7 to 10



Data gathering to determine if more regulation needed

Water utilities in the United States monitor for more than 100 contaminants and must meet 91 regulations for water safety and quality.

But should other contaminants be regulated? The 1996 Safe Drinking Water Act amendments require that once every five years EPA issue a new list of not more than 30 unregulated contaminants to be monitored by public water systems. This monitoring provides a basis for future regulatory actions to protect public health.

The first Unregulated Contaminant Monitoring Rule (UCMR 1) was published on Sept. 17, 1999, the second (UCMR 2) was published on Jan. 4, 2007 and the third (UCMR3) was published on May 2, 2012. Fort Worth did not detect any of the contaminants in the UCMR 1 and UCMR 2 testing. The third Unregulated Contaminant Monitoring Rule included assessments for 21 chemical contaminants, 7 hormones and two viruses. The virus testing did not impact water purchased from Fort Worth or Richland Hills' groundwater. This testing was limited to small groundwater systems that do not disinfect.

UCMR benefits the environment and public health by providing EPA and other interested parties with scientifically valid data on the occurrence of these contaminants in drinking water. Health information is necessary to know whether these contaminants pose a health risk.

Public water systems sampled for these contaminants for four consecutive quarters from 2013 to 2015. Fort Worth's sampling began in June 2013 and Richland Hills began sampling in March of 2015. The results shown are for the sampling in Richland Hills in 2015.

Richland Hills test results in this chart are from 2015.

Contaminant	Measure	Range of Detects	2016 Level	MRL	Common Sources of Substance
Vanadium	ppb	<0.2 to 1.9	1.9	0.2	Naturally occurring elemental metal; used as vanadium pentoxide which is a chemical intermediate and a catalyst
Molybdenum	ppb	1.38 to 2.84	2.84	1	Naturally occurring element found in ores and present in plants, animals and bacteria; commonly used form molybdenum trioxide is used as a chemical reagent
Strontium	ppb	150 to 261	261	0.3	Naturally occurring element; historically, commercial use of strontium has been in the faceplate class of cathode-ray tube televisions to block x-ray emissions
Chromium ¹	ppb	not detected		<0.2	Naturally occurring element; used in making steel and other alloys; chromium-3 or -6 forms are used for chrome plating; dyes and pigments, leather tanning and wood preservation
Chromium-6	ppb	<0.03 to 0.06	0.06	0.03	
Chlorate	ppb	<20 to 23.5	23.5	20	Agricultural defoliant or desiccant; disinfection byproduct; and used in production of chlorine dioxide

¹Total Chromium, the sum of Chromium in all its valence states, is already regulated in drinking water. As part of UCMR 3, EPA requires testing for Total Chromium in the same samples used to test for Chromium 6, which is on the UCMR 3 list. The value differs from what is listed in the previous table (Chromium Total) because of different sampling periods. The MCL for EPA's current total chromium regulation was determined based upon the health effects of Chromium 6.

UCMR 3 contaminants not detected

Chemicals

- 1,2,3-trichloropropane
- 1,3-butadiene
- chloromethane (methyl chloride)
- 1,1-dichloroethane
- bromomethane (methyl bromide)
- chlorodifluoromethane (HCFC-22)
- bromochloromethane (Halon 1011)
- 1,4-dioxane
- cobalt
- perfluorooctanesulfonic acid (PFOS)
- perfluorooctanoic acid (PFOA)
- perfluorononanoic acid (PFNA)

- perfluorohexanesulfonic acid (PFHxS)
- perfluoroheptanoic acid (PFHpA)
- perflourobutanesulfonic acid (PFBS)

Hormones

- 17-β-estradiol
- 17-α-ethynylestradiol
- estriol
- equilin
- estrone
- testosterone
- 4-androstene-3,17-dione

Viruses

- enteroviruses and noroviruses



Additional Information:

<http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr/ucmr3/>