2013 Drinking Water Quality Report
City of Richland Hills Public Works Administration
817-616-3830

In 2013, 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' 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 1 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, 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 agüa potable. Si tiene preguntas ó comentarios sóbre éste reporte, puede comunicarse con una representate bilinqüe 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 2013. 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 2013 unless otherwise indicated. In addition, since 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

TCEQ completed an assessment of our source water and the results indicate 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 detection of these contaminants will be found in this water quality report. For more information please contact us at 817-616-3830. Some of this source water information is available on Texas Drinking Water Watch at www.tceq.texas.gov/gis/swaview.

Microorganism testing shows low detections in Fort Worth water sources

Tarrant Regional Water District monitors the raw water at all Fort Worth water intake sites for Cryptosporidium, Giardia Lambia and viruses. The source is human and animal fecal waste in the watershed. No viruses were detected, but Cryptosporidium and Giardia Lambia, microbial parasites common in surface water, were detected at very low levels. The Cryptosporidium testing methods cannot determine if the parasite is dead or inactive or alive and capable of causing cryptosporidiosis. This is an abdominal infection that causes nausea, diarrhea and abdominal cramps after ingestion. The drinking water treatment process is designed to remove Cryptosporidium and Giardia Lambia through filtration.

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 (MCLI) – 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 (MRLD) – 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 (µg/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

Lead and Copper

Year	Contaminant	The 90th Percentile	Number of Sites Exceeding Action Level	Action Level	Unit of Measure	Source of Contaminant
2013	Lead	0.00151	0	0.015	mg/L	Corrosion of household plumbing systems, erosion of natural deposits
2013	Copper	0.217	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://www.epa.gov/safewater/lead.

Contaminant	Measure	MCL	2013 Highest single result	Lowest monthly % of samples ≤0.3 NTU	MCLG	Common Sources of Substance
Turbidity	NTU	TT	0.38	99.4%	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	2013 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	0 to 2.2% of Fort Worth monthly samples	0.0 to 2.2%	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 E. coli and no fecal coliform bacteria

Maximum Residual Disinfectant Level

Year	Contaminant	Average Level	Minimum Level	Maximum Level	MRDL	MRDLG	Unit of Measure	Source of Contaminant
2013	Chloramines	2.24	0.60	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

[1]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	2013 Level	Range	MCLG	Common Sources of Substance
Alpha particles[2]	pCi/L	15	2.8	0 to 2.8	N/a	Erosion of natural deposit
Gross Beta emitters[2]	pCi/L	50	7.5	0 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
Radium 228[2]	pCi/L	5	1.1	0 to 1.1	0	Erosion of natural deposits
Arsenic	ppb	10	4.48	1.33 to 4.48	0	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Atrazine	ppb	3	0.087	0.04 to 0.22	3	Runoff from herbicide used on row crops
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	2.12	1.28 to 2.12	100	Discharge from steel and pulp mills, erosion of natural deposits
Fluoride	ppm	*4*	0.65	0.23 to 0.65	4	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Nitrate (measured as Nitrogen)	ppm	10	0.060	0.045 to 0.060	10	Runoff from fertilizer use/ leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (measured as Nitrogen)	ppm	*1*	<0.004	<0.004	1	Runoff from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Selenium	ppb	50	3.98	2.92 to 3.98	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Bromate	ppb	10	0.08	0 to 0.08	0	By-product of drinking water disinfection
Haloacetic Acids	ppb	60	8.90	2.20 to 8.90	N/A	By-product of drinking water disinfection
Total Trihalomethanes	ppm	80	26.1	5.60 to 26.1	N/A	By-product of drinking water disinfection

[2]Because of historically low levels of radionuclides in its water, TCEQ has Fort Worth on a reduced monitoring schedule. The test results shown are from 2011 to 2013.

In the water loss audit submitted to the Texas Water Development Board for the time period of October 2012 to September 2013, our system lost an estimated 21,180,816.35 gallons of water, or 7.11% of the water produced. 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	2013 Level	MCL	MCLG	Common Sources of Substance
Chloral Hydrate	ppb	0.3 to 0.68	0.68	Not regulated	None	*By-product of drinking water disinfection*
Bromoform	ppb	0 to 9.2	9.2	Not regulated	None	By-products of drinking water disinfection; not regulated individually; included in Total Trihalomethanes
Bromodichloromethane	ppb	1.8 to 8.19	8.19	Not regulated	None	
Chloroform	ppb	0 to 14.4	14.4	Not regulated	None	
Dibromochloromethane	ppb	1.6 to 3.82	3.82	Not regulated	None	
Monochloroacetic Acid	ppb	0 to 2.20	2.20	Not regulated	70	By-products of drinking water disinfection; not regulated individually; included in Haloacetic Acids
Dichloroacetic Acid	ppb	1.0 to 5.40	5.40	Not regulated	None	
Trichloroacetic Acid	ppb	0 to 2.0	2.0	Not regulated	20	
Monobromoacetic Acid	ppb	0 to 1.3	1.3	Not regulated	None	
Dibromoacetic Acid	ppb	0 to 2.1	2.1	Not regulated	None	
Bromochloracetic Acid	ppb	1.3 to 2.6	2.6	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.

Item	Measure	2013 Range
Bicarbonate	ppm	88 to 114
Calcium	ppm	31 to 42
Chloride	ppm	10 to 26
Conductivity	µmhos/cm	264 to 360
pH	units	7.7 to 8.3
Magnesium	ppm	3 to 6
Sodium	ppm	17 to 27
Sulfate	ppm	22 to 36
Total Alkalinity as $CaCO_3$	ppm	88 to 114
Total Dissolved Solids	ppm	150 to 244
Total Hardness as $CaCO_3$	ppm	92 to 122
Total Hardness in Grains	grains/gallon	5 to 7

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 includes assessment for 21 chemical contaminants, 7 hormones and two viruses. The virus testing did not impact Fort Worth water purchased by Richland Hills. 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 will sample for these contaminants for four consecutive quarters from 2013 to 2015. Fort Worth's sampling occurred from June 2013 through March 2014. The results shown are for the first three quarters of sampling in Fort Worth. The final quarter's results will appear in next year's annual water quality report. Richland Hills will begin UCMR 3 testing in March 2015.

UCMR 3

Fort Worth's testing detected only 6 of the 21 chemical contaminants and none of the seven hormones.

Contaminant	Measure	Range of Detects	2013 Level	MRL	Common Sources of Substance
Bromochloromethane (Halon 1011)	ppb	0 to 0.25	0.25	0.06	Used as a fire extinguishing fluid; a explosive suppressant; a solvent in the manufacturing of pesticides
Vanadium	ppb	0.56 to 1.6	1.6	0.2	Naturally occurring elemental metal; used as vanadium pentoxide which is a chemical intermediate and a catalyst
Molybdenum	ppb	1.6 to 2.5	**2.5**	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	260 to 330	330	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	0 to 0.4	0.4	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 to 0.14	0.14	0.03	
Chlorate	ppb	0 to 720	720	20	Agricultural defoliant or desiccant; disinfection byproduct; and used in production of chlorine dioxide

[1]Total 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
chlorodifluoromethane (HCFC-22)
1,4-dioxane
Cobalt
perfluorooctanesulfonic acid (PFOS)
perfluorooctanoic acid (PFOA)
perfluorononanoic acid (PFNA)
perfluorohexanesulfonic acid (PFHxS)
perfluoroheptanoic acid (PFHpA)
perflourobutanesulfonic acid (PFBS)

Hormones

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