2015 Annual Drinking Water Quality Report

(Consumer Confidence Report)

Customer Service: 817-297-2201 Emergency - Nights & Weekends: 817-297-2276

Special Notice

You may be more vulnerable than the general population to certain microbial contaminants, such as Cryptosporidium, in drinking water. Infants, some elderly or immunocompromised such as those undergoing chemotherapy for cancer; persons 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 for infections. You should seek advice about drinking water from your Physician or health care providers. Additional guidelines for appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline at (800) 426-4791.

Public Participation Opportunities

Date: City Council meetings are the 1st and 3rd Thursday of each month

Time: 7:00 pm

Location: City Hall, Council Chambers

Phone No: 817-297-2201

To learn about future public meetings (concerning your drinking water), or to request to schedule one, please call us or check our website at www.ci.crowley.tx.us .

Where do we get our drinking water?

Our drinking water is obtained from purchased surface water sources. It comes from the following Lake/River/Reservoir/Aquifer: Surface Water is purchased from the City of Fort Worth (Lake Worth, Eagle Mountain Lake, Lake Bridgeport, Richland Chambers Reservoir, Cedar Creek Reservoir, Lake Benbrook and Clear Fork Trinity River).

Source water assessment and its availability

The TCEQ completed an assessment of your source water and results indicate that some of your sources are susceptible to certain contaminants. The sampling requirements for your water system are based on this susceptibility and previous sample data. Any detections of these contaminants may be found in this Consumer Confident Report. For more information on source water assessments and protection efforts at our system, contact Public Works at 817/297-2201. For more information about your sources of water, please refer to the Source Water Assessment Viewer available at the following URL: http://www.tceq.state.gov/gis/swaview

Further details about sources and source-water assessments are available in Drinking Water Watch at the following URL: http://dww2.tceq.texas.gov/DWW/Drinkin

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, farming.

-Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water 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 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.

OUR DRINKING WATER IS REGULATED

Annual Water Quality Report is for the period of January 1 to December 31, 2015.

This report is a summary of the quality of the water we provide our customers. The analysis was made by using the data from the most recent U.S. Environmental Protection Agency (EPA) required tests and is presented in the attached pages. We hope this information helps you become more knowledgeable about what's in your drinking water.

SOURCES OF 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.

Drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPAs Safe Drinking Water Hotline at (800)426-4791.

En Espanol

Este informe contiene informacion muy importante sobre la calidad de su agua potable. Por favor lea este informe o comuniquese con alguien que peuda traducer la informacion.

About The Following Pages

The following tables contain scientific terms and measures, some of which may require explanation.

DEFINITIONS

Maximum Contaminant Level Goal (MCLG)
The level of a contaminant in drinking water below which there is no known or expected health risk. MCLGs allow for a margin of safety.

Maximum Contaminant Level (MCL)
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.

Maximum Residual Disinfectant Level Goal (MRDLG)
The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Maximum Residual Disinfectant Level (MRDL)
The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Avg: Regulatory compliance with some MCLs is based on running annual average of monthly samples.

ppm: Milligrams per liter or parts per million – or one ounce in 7,350 gallons of water.

ppb: Micrograms per liter or parts per billion – or one ounce in 7,350,000 gallons of water

na: Not applicable

NTU: Nephelometric Turbidity Units (a measure of water turbidity or clarity)

pCi/L: picocuries per liter (a measure of radioactivity)

Treatment Technique (TT): a required process intended to reduce the level of a contaminant in drinking water

Water Quality Data Table

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions above.

Inorganic Contaminants

Collection Date	Contaminant	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Unit of Measure	Violation	Source of Contaminant
2011	Arsenic	0.349	0.349 to 0.349	0	10	ppb	N	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
2011	Barium	0.0144	0.0144 to 0.0144	2	2	ppm	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
2011	Chromium	7.55	7.55 to 7.55	100	100	ppb	N	Discharge from steel and pulp mills; Erosion of natural deposits.
2014	Cyanide	0.0733	0 to 0.0733	.2	.2	ppm	N	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
2014	Fluoride	0.499	0.466 to 0.499	4.0	4.0	ppm	N	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
2015	Nitrate [measured as Nitrogen]	1	0 to 1.11	10	10	ppm	N	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
2011	Selenium	1.02	1.02 to 1.02	50	50	ppb	N	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.
2011	Thallium	.0.2	0.2 to 0.2	0.5	2	ppb	N	Discharge from electronics, glass, and leaching from ore-processing sites; drug factories.
Radioactive Contaminants								
2010	Beta/Photon emitters	4.2	0 to 4.2	0	50	pCi/L*	N	Decay of natural and man-made deposits. *EPA considers 50 pCi/L to be the level of concern for beta particles.
2010	Gross alpha excluding radon and uranium	2	0 to 2	0	15	pCi/L	N	Erosion of natural deposits.

Synthetic Organic Contaminants Including Pesticides

Collection Date	Contaminant	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Unit of Measure	Violation	Source of Contaminant
2015	Atrazine	0.16	0 to 0.016	3	3	ppb	N	Runoff from herbicide used on row crops.
2014	Di (2-ethyhexyl) phthalate	0.5	0 to 0.5	0	6	ppb	N	Discharge from rubber and chemical factories.

Volatile Organic Contaminants

Collection Date	Contaminant	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Unit of Measure	Violation	Likely source of Contamination
2015	Dichloromethane	1	0 – 0.62	0	5	ppb	N	Discharge from pharmaceutical and chemical factories.

In 2015, testing was conducted on the following contaminants; all testing resulted in levels lower than the detect levels.
1,2-Dichloropropane, Benzene, Carbon Tetrachloride, Chlorobenzene, Ethylbenzene, Styrene, Tetrachloro-ethylene, Toluene, Trichloro-ethylene
Vinyl Chloride, Xylenes, cis-1,2-Dichloroethylene, o-Dichlorobenzene, p-Dichlorobenzene, trans-1,2-Dichloroethylene

Disinfectants and Disinfection By-products

Collection Date	Contaminant	Highest Level Detected	Range of Levels Detected	MCLG or MRDLG	MCL	Units	Violation	Source of Contaminant
2014	Total Haloacetic Acids	10	4.3 – 16.3	No goal for the total	60	ppb	N	By-product of drinking water chlorination.
2014	Total Trihalomethanes	20	10.7 – 27.1	No goal for the total	80	ppb	N	By-product of drinking water chlorination.
2014	Chlorine (as Cl2)	3.8	0.2 to 3.8	4	4	ppm	N	Water additive used to control microbes.

Lead and Copper

The Lead and Copper Rule protects public health by minimizing lead and copper levels in drinking water, primarily by reducing water corrosivity. Lead and copper enter drinking water mainly from corrosion of lead and copper containing plumbing materials.

Collection Date	Contaminant	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Unit of Measure	Violation	Likely Source of Contamination
2014	Lead	0	15	3	1	ppb	N	Corrosion of household plumbing systems; erosion of natural deposits.
2014	Copper	1.3	1.3	0.396	0	ppm	N	Corrosion of household plumbing systems/erosion of natural deposits; leaching from wood preservatives.

Violations Table

E. coli

Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.

Violation Type	Violation Began	Violation End	Violation Explanation
MONITOR GWR TRIGGERED/ADDITIONAL, MAJOR	07/01/2015	07/31/2015	We failed to collect follow-up samples within 24 hours of learning of the total coliform-positive sample. These needed to be tested for fecal indicators from all sources that were being used at the time the positive sample was collected.

Total Coliform

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

MCL (TCR), MONTHLY	07/01/2015	07/31/2015	Total coliform bacteria were found in our drinking water during the period indicated in enough samples to violate a standard.

Coliform Bacteria/E. coli

Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.

Maximum Contaminant Level	Total Coliform Maximum Contaminant Level	Highest No. of Positive	Fecal Coliform or E. Coli Maximum Contaminant Level	Total No. of Positive E. Coli or Fecal Coliform Samples	Violation	Likely Source of Contamination
0	1 positive monthly sample.	2	Fecal Coliform or E. Coli MCL: A routine sample and a repeat sample are total coliform positive and one is also fecal coliform or E. coli positive	1	Y	Naturally present in the environment.

UCMR3

As part of an on-going evaluation program, the EPA has required us to monitor some additional contaminants/chemicals. Information collected through the monitoring of these contaminants/chemicals will help ensure that future decision on drinking water standards are based on sound science. UCMR benefits the environment and public health by providing EPA and other interest 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. Crowley's sampling will occur from April 2014 through March 2015. The results shown are for the first three quarters of 2014. The final quarter will appear on next year's water quality report.

Contaminant	Measure	Range of detects	2015 Level	MRL	Contaminants NOT detected	
Chlorate	ppb	0 to 119	119	20	1,2,3-trichloropropane	perfluorooctanoic acid (PFOA)
Chromium[1]	ppb	0 to 0.259	0.259	0.2	1,3-butadiene	perfluorononanoic acid (PFNA)
Chromium-6	ppb	0 to 0.155	0.155	0.03	chloromethane (methyl chloride)	perfluorohexanesulfonic acid (PFHpA)
Bromochloromethane (halon 1011)	ppb	0 to 0.282	0.282	0.06	1,1-dichloroethane	perfluorobutanesulfonic acid (PFBS)
Molybdenum	ppb	1.48 to 1.72	1.72	1	bromomethane	17-B-estradiol
Strontium	ppb	216 to 445	445	0.3	chlorodifluoromethane (HCFC-22)	17-α–ethynylestradiol
Vanadium	ppb	0 to 2.13	2.13	0.2	1,4-dioxane	estriol, equilin, estrone
					cobalt	testosterone
					perfluorooctanesulfonic acid (PFOS)	4-androstene-3,17-dione

[1]Total Chromium, the sum of chromium in all its valence states, is already regulated in drinking water. As part of UCMR3, EPA requires testing for Total Chromium in the same samples used to test for Chromium-6, which is on the UCMR3 list. The value differs from what is listed in the other table because of different sampling periods. The MCL for EPOA's current total chromium regulation was determined based upon the health effects of Chromium-6.

The City of Crowley's water loss as reported on the Water Loss Audit for 2015 was 71,829,130 gallons of water.

Fort Worth Drinking Water Year 2015 Results

Contaminant	Measure	MCL	2015 Level	Range of Detects	MCLG	Common Sources of Substance in Drinking Water
Gross Beta particles & photon emitters[1]	pCi/L	50	5.6	4 to 5.6	N/A	Decay of natural and man-made deposits of certain minerals that are radioactive and may emit forms of radiation known as photons and beat radiation
Radium 226/228	pCi/L	5	1	1 to 1	0	Erosion of natural deposits
Arsenic	ppb	10	1.70	0.96 to 1.70	0	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Antimony	ppb	6	0.21	0 to 0.21	6	Discharge from petroleum refineries, fire retardants, ceramics, electronics, solder, test addition
Barium	ppm	2	0.07	0.05 to 0.07	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium (Total)	ppb	100	1	0.87 to 1	100	Discharge from steel and pulp mills, erosion of natural deposits
Cyanide	ppb	200	145	13.4 to 145	200	Discharge from plastic and fertilizer factories; discharge from steel and metal factories
Fluoride	ppm	4	0.56	0.12 to 0.56	4	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Nitrate (measured as Nitrogen)	ppm	10	0.67	0.2 to 0.67	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (measured as Nitrogen)	ppm	1	0.04	0 to 0.04	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
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	6.22	0 to 6.22	0	Byproduct of drinking water disinfection
Haloacetic Acids	ppb	60	15.6	8.8 to 15.6	N/A	Byproduct of drinking water disinfection
Total Trihalomethanes	ppb	80	27.8	12.4 to 27.8	N/A	Byproduct of drinking water disinfection
Total Coliforms (including fecal coliform & E. coli)	% of positive samples	Presence in 5% or more of monthly samples	Presence in 2.2% of monthly samples	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
Turbidity[2]	NTU	TT	0.50 Highest single Result 98.9% Lowest monthly % of samples ≤ 0.3 NTU	N/A	N/A	Soil Runoff
Disinfectant	**Measure**	**MRDL**	**2015 Level**	**Range of Detects**	**MRDLG**	**Common Sources of Substance in Drinking Water**
Chlorine	ppm	4	1.6	0.2 to 4	4	Water additive used to control microbes
Contaminant	**High**	**Low**	**Average**	**MCL**	**MCGL**	**Common Sources of Substance in Drinking water**
Total Organic Carbon[3]	1	1	1	TT = % removal	N/A	Naturally occurring

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

[2]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.

[3]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.

Unregulated Contaminants[4]

[4] 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.

Contaminants	unit	Range of Detections	2015 Level	MCL	MCLG	Common Sources of Substance in Drinking Water
Chloral Hydrate	ppb	0.30 to 0.67	0.67	Not Regulated	None	By-product of drinking water disinfection
Bromoform	ppb	1.5 to 9.9	9.9	Not Regulated	None	By-products of drinking water disinfection; not regulated individually; included in Total Trihalomethanes
Bromodichloromethane	ppb	2.6 to 8.9	8.9	Not Regulated	None	
Chloroform	ppb	2.8 to 15.2	15.2	Not Regulated	None	
Dibromochloromethane	ppb	1.9 to 9.0	9.0	Not Regulated	None	
Monochloroacetic Acid	ppb	2.0 to 5.0	5.0	Not Regulated	None	By-products of drinking water disinfection; not regulated individually; included in Haloacetic Acids
Dichloroacetic Acid	ppb	7.3 to 9.3	9.3	Not Regulated	None	
Trichloroacetic Acid	ppb	1.2 to 6.8	6.8	Not Regulated	None	
Monobromoacetic Acid	ppb	0 to 2.4	2.4	Not Regulated	None	
Dibromoacetic Acid	ppb	0 to 3.8	3.8	Not Regulated	None	

TCEQ accesses raw water supplies for susceptibility

Fort Worth uses surface 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 Corps of Engineers is responsible for Benbrook Lake. The other four lakes are owned and operated by Tarrant Regional Water District.

The Texas Commission on Environmental Quality completed and assessment of Fort Worth's source waters. TCEQ classified the risk to our source waters as high for most contaminants.

High susceptibility means there are activities near the source water or a watershed that make it very likely that 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 Forth Worth purchases its water, received the assessment reports.

For more information on source water assessments and protection efforts at our system, contact Stacy Walters at 817-392-8203.

Further details about the source-water assessments are available at *dww2.tceq.gov/DWW/JSP/SWAP.jsp?tinwsys_is_number=5802&tinwsys_st_code=TX&wsnumber=TX2200012%20%20%20&DWWState=TX.*

Microorganism testing shows low detections in raw water

Tarrant Regional Water District monitors the raw water at all intake sites for *Cryptosporidium, Giardia Lamblia* and viruses. The source is human and animal fecal waste in the watershed.

The 2015 sampling showed low level detections 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.

Intake Location	*Cryptospridium*	*Giardia Lamblia*	Adenovirus	Enterovirus	Astrovirus	Rotavirus
Richland-Chambers Reservoir	Not detected	Not detected	January	Not detected	Not detected	Not detected
Cedar Creek Lake	Not detected	Not detected	January & March	Not detected	Not detected	Not detected
Lake Benbrook	Not detected	Not detected	January & March	Not detected	Not detected	Not detected
Eagle Mountain Lake	June	June	January	September	Not detected	Not detected
Lake Worth	Not detected	Not detected	January & March	Not detected	Not detected	Not detected
Clear Fork of Trinity River	Not detected	June	January & March	Not detected	Not detected	Not detected

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	2015 Range
Bicarbonate	ppm	96.4 to 120
Calcium	ppm	33.3 to 42.1
Chloride	ppm	12.5 to 25.9
Conductivity	µmhos/cm	333 to 427
pH	units	8.0 to 8.2
Magnesium	ppm	3.55 to 6.79
Sodium	ppm	12.3 to 28.5
Sulfate	ppm	20.2 to 29.0
Total Alkalinity as $CaCo_3$	ppm	96.4 to 120
Total Dissolved Solids	ppm	163 to 234
Total Hardness as $CaCO_3$	ppm	101 to 133
Total Hardness in Grains	grains/gallon	6 to 8

Effective April 17, 2014: Current Watering Restrictions were made permanent.

MONDAY: **NO** Watering allowed

TUESDAY & FRIDAY: Non-residential sites (apartments, businesses, parks, common areas)

WEDNESDAY & SATURDAY: Residential addresses ending in 0, 2, 4, 6, 8

THURSDAY & SUNDAY: Residential addresses ending in 1, 3, 5, 7, 9

For additional information, please go to the City of Crowley's website at www.ci.crowley.tx.us