



# 2016 City Of Terrell Consumer Confidence Report

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## Why you received this report

This report provides information about Terrell's water system including source water, levels of detected contaminants, and our compliance with all drinking water standards. **(The City Of Terrell is rated a Superior Public Water System. This is the highest rating from Texas Commission of Environmental Quality, which means The City Of Terrell meets and exceeds all State and Federal requirements for water quality.)**

## Where Your Water Comes From

The City of Terrell receives its water from two main water sources. The Primary source is Lake Tawakoni, which provides roughly 95% of Terrell's water, and Lake Lavon as the secondary water source, which provides the remaining 5%. Terrell being a purchased water city buys the water pretreated from North Texas Municipal Water District. TCEQ has completed a Source Water Assessment for all drinking water systems that own their sources. The report describes the susceptibility and types of constituents that may come into contact with your **drinking** water source based on human **activities and natural conditions**. The system from which we purchase our water received the assessment report. For more information on source water **assessments** and protection efforts at our system, contact **Dick Boyd at 972-551-6635**.

## All Drinking Water May Contain Contaminants

Those sources of drinking water (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 in some cases radioactive material, and can pick up substances resulting from the presence of animal or human activity. 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. Contaminants that may be present in source water include: Microbial contaminants, inorganic contaminants, pesticides and herbicides, organic chemical contaminants, and radioactive contaminants. In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Contaminants may be found in drinking water that may cause taste, color, or odor problems. These types of problems are not necessarily cause for health concerns. For more information about contaminants and potential health risk, call the U.S. EPA's Safe Drinking Water Hotline (1-800-426-4791).

## Secondary Constituents

Many constituents, such as calcium, sodium, or iron, which are often found in drinking water, can cause taste, color, and odor problems. These problems are called secondary constituents and are regulated by the state of Texas, not the EPA. These constituents are not causes for health concerns. Therefore secondary constituents are required to be reported in this report but they may greatly affect aspects of your water.

## For Customers With Special Health Concerns

You may be more vulnerable than the general population 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 are undergoing organ transplants; those who are undergoing treatment with steroids; and other people with HIV/AIDS or other immune system disorders can be particularly at risk from infections. You should seek advice about drinking water from your physicians 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 at (1-800-426-4791).

### **Public Participation**

The public is welcomed to attend the City of Terrell City Council Meetings held the first and third Tuesday of every month.

### **Definitions**

**Avg:** Regulatory compliance with some MCLs are based on running annual average of monthly samples

**Maximum Contaminant Levels or 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 treatment technology.

**Maximum Contaminant Level Goal Or MCLG:** The 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.

**Maximum Residual Disinfectant Level or 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.

**Maximum Residual Disinfectant Level Goal or 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.

**MFL:** Millions of fibers per liter (a measure of asbestos)

**na:** Not Applicable

**NTU:** Nephelometric Turbidity Unit

**pCi/L:** Picocuries Per Liter (a measure of radioactivity)

**ppb:** Parts per billion - or one ounce in 7,350,000 gallons of water.

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

**ppt:** Parts per trillion or nanograms per liter (ng/l)

**ppq:** parts per quadrillion, or picograms per liter (pg/l)

## Coliform Bacteria

Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Highest No. of Positives	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	1	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	N	Naturally present in the environment

## Lead and Copper

### Definitions:

**Action Level Goal (ALG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. ALGs allow for a margin of safety.

**Action Level:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Lead and Copper	Date Sampled	MCLG	Action Level	90th Percentile	# of Sites over all	Units	Violation	Likely Source of contamination
Copper	2016	1.3	1.3	0.37	0	ppm	N	Erosion of natural Deposits; Leaching from wood preservatives; Corrosion of household plumbing systems
Lead	2016	0	15	2.4	0	ppb	N	Corrosion of household plumbing systems; Erosion of natural deposits

## Water Quality Test Results

## Regulated Contaminants

Disinfection and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violaton	Likely Source of Contamination
Haloacetic acids (HAA5)	2016	16	12.3-17.7	No Goal for the total	60	ppb	N	By-Product of drinking water disinfection
Total Trihalomethanes	2015	31	17.6-45.3	No Goal for the total	80	ppb	N	By-product of drinking water disinfection
Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Nitrate (Measured as Nitrogen)	2016	.474	.474-.474	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks: erosion of natural deposits

## Violation Table

### Lead and Copper Rule

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 ater mainly from corrosion of lead and copper containing plumbing materials.

Violation Type	Violation Begin	Violation End	Violation Explanation
Lead and Copper Notice (LCR)	12/30/2013	10/04/2016	We failed to provide the results of the lead tap water monitoring to the consumers at the location water was tested. These were supposed to be provided no later than 30 days after learning the results

*Note: for a complete list of parameters and constituents tested, refer to supplemental information , "North Texas Municipal Water District Tawako ni WTP Consumer Confidence Report for Year 2016". The City will post a copy for viewing at City Hall and the Library. A copy of the report can also be obtained at the Reception desk in City Hall.*

# North Texas Municipal Water District Tawakoni WTP Consumer Confidence Report For Year 2016

## (Supplemental Information to the 2016 City of Terrell Consumer Confidence Report)

Maximum Contaminant Level Goal	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	5%	1	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	No	Naturally present in the environment.

**NOTE:** Reported monthly tests found no fecal coliform bacteria. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present.

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels	MCLG	MCL	Units	Violation	Likely Source of Contamination
Total Haloacetic Acids (HAA5)	2016	16	12.3-17.7	No goal for the total	60	ppb	No	By-product of drinking water chlorination.
Total Trihalomethanes (TTHM)	2016	31	17.6-45.5	23.8	80	ppb	No	By-product of drinking water chlorination.
Bromate	2016	0	0	5	10	ppb	No	By-product of drinking water ozonation.

**NOTE:** Not all sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future.

Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels	MCLG	MCL	Units	Violation	Likely Source of Contamination
Antimony	2016	Levels lower than detect level	0 - 0	6	6	ppb	No	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder; and test addition.
Arsenic	2016	Levels lower than detect level	0 - 0	0	10	ppb	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Barium	2016	0.056	0.056 - 0.056	2	2	ppm	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Beryllium	2016	Levels lower than detect level	0 - 0	4	4	ppb	No	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries.
Cadmium	2016	Levels lower than detect level	0 - 0	5	5	ppb	No	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints.
Chromium	2016	0.89	0 - 0.89	100	100	ppb	No	Discharge from steel and pulp mills; erosion of natural deposits.
Fluoride	2016	0.36	0 - 0.36	4	4	ppm	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Mercury	2016	Levels lower than detect level	0 - 0	2	2	ppb	No	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland.
Nitrate (measured as Nitrogen)	2016	0.546	0.278 - 0.546	10	10	ppm	No	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits.

**Nitrate Advisory:** Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

Selenium	2016	Levels lower than detect level	0-0	50	50	ppb	No	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
Thallium	2016	Levels lower than detect level	0 - 0	0.5	2	ppb	No	Discharge from electronics, glass, and leaching from ore-processing sites; drug factories.
Radioactive Contaminants	Collection Date	Highest Level Detected	Range of Levels	MCLG	MCL	Units	Violation	Likely Source of Contamination
Beta/Photon emitters	5/28/2015	Levels lower than detect level	0 - 0	0	4	mrem/yr	No	Decay of natural and man-made deposits.
Gross alpha excluding radon and uranium	5/28/2015	Levels lower than detect level	0 - 0	0	15	pCi/L	No	Erosion of natural deposits.

# North Texas Municipal Water District Tawakoni WTP Consumer Confidence Report For Year 2016

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Synthetic organic contaminants including pesticides and herbicides	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Radium-228	5/28/2015	Levels lower than detect level	0 - 0	0	5	pCi/L	No	Erosion of natural deposits.
2, 4, 5 - TP (Silvex)	2015	Levels lower than detect level	0 - 0	50	50	ppb	No	Residue of banned herbicide.
2, 4 - D	2015	Levels lower than detect level	0 - 0	70	70	ppb	No	Runoff from herbicide used on row crops.
Alachlor	2015	Levels lower than detect level	0 - 0	0	2	ppb	No	Runoff from herbicide used on row crops.
Atrazine	2015	Levels lower than detect level	12-12	3	3	ppb	No	Runoff from herbicide used on row crops.
Benzo (a) pyrene	2015	Levels lower than detect level	0 - 0	0	200	ppt	No	Leaching from linings of water storage tanks and distribution lines.
Carbofuran	2015	Levels lower than detect level	0 - 0	40	40	ppb	No	Leaching of soil fumigant used on rice and alfalfa.
Chlordane	2015	Levels lower than detect level	0 - 0	0	2	ppb	No	Residue of banned termiticide.
Dalapon	2015	Levels lower than detect level	0 - 0	200	200	ppb	No	Runoff from herbicide used on rights of way.
Di (2-ethylhexyl) adipate	2015	Levels lower than detect level	0 - 0	400	400	ppb	No	Discharge from chemical factories.
Di (2-ethylhexyl) phthalate	2015	Levels lower than detect level	0 - 0	0	6	ppb	No	Discharge from rubber and chemical factories.
Dibromochloropropane (DBCP)	2015	Levels lower than detect level	0 - 0	0	0	ppt	No	Runoff / leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards.
Dinoseb	2015	Levels lower than detect level	0 - 0	7	7	ppb	No	Runoff from herbicide used on soybeans and vegetables.
Endrin	2015	Levels lower than detect level	0 - 0	2	2	ppb	No	Residue of banned insecticide.
Ethylene dibromide	2015	Levels lower than detect level	0 - 0	0	50	ppt	No	Discharge from petroleum refineries.
Heptachlor	2015	Levels lower than detect level	0 - 0	0	400	ppt	No	Residue of banned termiticide.
Heptachlor epoxide	2015	Levels lower than detect level	0 - 0	0	200	ppt	No	Breakdown of heptachlor.
Hexachlorobenzene	2015	Levels lower than detect level	0 - 0	0	1	ppb	No	Discharge from metal refineries and agricultural chemical factories.
Hexachlorocyclopentadiene	2015	Levels lower than detect level	0 - 0	50	50	ppb	No	Discharge from chemical factories.
Lindane	2015	Levels lower than detect level	0 - 0	200	200	ppt	No	Runoff / leaching from insecticide used on cattle, lumber, and gardens.
Methoxychlor	2015	Levels lower than detect level	0 - 0	40	40	ppb	No	Runoff / leaching from insecticide used on fruits, vegetables, alfalfa, and livestock.
Oxamyl [Vydate]	2015	Levels lower than detect level	0 - 0	200	200	ppb	No	Runoff / leaching from insecticide used on apples, potatoes, and tomatoes.
Pentachlorophenol	2015	Levels lower than detect level	0 - 0	0	1	ppb	No	Discharge from wood preserving factories.
Simazine	2015	Levels lower than detect level	0 - 0	4	4	ppb	No	Herbicide runoff.
Toxaphene	2015	Levels lower than detect level	0 - 0	0	3	ppb	No	Runoff / leaching from insecticide used on cotton and cattle.
Volatile Organic Contaminants	Collection Date	Highest Level Detected	Range of Levels	MCLG	MCL	Units	Violation	Likely Source of Contamination
1, 1, 1 - Trichloroethane	2016	Levels lower than detect level	0 - 0	200	200	ppb	No	Discharge from metal degreasing sites and other factories.
1, 1, 2 - Trichloroethane	2016	Levels lower than detect level	0 - 0	3	5	ppb	No	Discharge from industrial chemical factories.
1, 1 - Dichloroethylene	2016	Levels lower than detect level	0 - 0	7	7	ppb	No	Discharge from industrial chemical factories.
1, 2, 4 - Trichlorobenzene	2016	Levels lower than detect level	0 - 0	70	70	ppb	No	Discharge from textile-finishing factories.
1, 2 - Dichloroethane	2016	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from industrial chemical factories.

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1, 2 - Dichloropropane	2016	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from industrial chemical factories.
Benzene	2016	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from factories; leaching from gas storage tanks and landfills.
Carbon Tetrachloride	2016	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from chemical plants and other industrial activities.
Chlorobenzene	2016	Levels lower than detect level	0 - 0	100	100	ppb	No	Discharge from chemical and agricultural chemical factories.
Dichloromethane	2012	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from pharmaceutical and chemical factories.
Ethylbenzene	2016	Levels lower than detect level	0 - 0	0	700	ppb	No	Discharge from petroleum refineries.
Styrene	2016	Levels lower than detect level	0 - 0	100	100	ppb	No	Discharge from rubber and plastic factories; leaching from landfills.
Tetrachloroethylene	2016	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from factories and dry cleaners.
Toluene	2016	Levels lower than detect level	0 - 0	1	1	ppm	No	Discharge from petroleum factories.
Trichloroethylene	2016	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from metal degreasing sites and other factories.
Vinyl Chloride	2016	Levels lower than detect level	0 - 0	0	2	ppb	No	Leaching from PVC piping; discharge from plastics factories.
Xylenes	2016	Levels lower than detect level	0 - 0	10	10	ppm	No	Discharge from petroleum factories; discharge from chemical factories.
cis - 1, 2 - Dichloroethylene	2016	Levels lower than detect level	0 - 0	70	70	ppb	No	Discharge from industrial chemical factories.
o - Dichlorobenzene	2016	Levels lower than detect level	0 - 0	600	600	ppb	No	Discharge from industrial chemical factories.
p - Dichlorobenzene	2016	Levels lower than detect level	0 - 0	75	75	ppb	No	Discharge from industrial chemical factories.
trans - 1, 2 - Dichloroethylene	2016	Levels lower than detect level	0 - 0	100	100	ppb	No	Discharge from industrial chemical factories.

	Limit (Treatment Technique)	Level Detected	Violation	Likely Source of Contamination
<b>Highest single measurement</b>	1 NTU	0.13	No	Soil runoff.
<b>Lowest monthly percentage (%) meeting limit</b>	0.3 NTU	100.00%	No	Soil runoff.
<b>NOTE:</b> 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.				

Disinfectant Type	Year	Average Level	Minimum Level	Maximum Level	MRDL	MRDLG	Units	Source of Chemical
Chlorine Residual (Chloramines)	2016	2.92	1.2	3.9	4.0	<4.0	ppm	Disinfectant used to control microbes.
Chlorine Dioxide	2016	0.005	0	0.23	0.8	0.8	ppm	Disinfectant.
Chlorite	2016	0.02	0	0.08	1.0	N/A	ppm	Disinfectant.
	Collection Date	Highest Level Detected	Range of Levels Detected		Units		Likely Source of Contamination	
Source Water	2016	6.08	4.93-6.08		ppm		Naturally present in the environment.	
Drinking Water	2016	2.74	1.80-2.74		ppm		Naturally present in the environment.	
Removal Ratio	2016	69.0%	48.5-69.0%		% removal *		N/A	

**NOTE:** Total organic carbon (TOC) has no health effects. The disinfectant can combine with TOC to form disinfection by-products. Disinfection is necessary to ensure that water does not have unacceptable levels of pathogens. By-products of disinfection include trihalomethanes (THMs) and haloacetic acids (HAA) which are reported elsewhere in this report.

\* Removal ratio is the percent of TOC removed by the treatment process divided by the percent of TOC required by TCEQ to be removed.

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Contaminants	Collection Date	Highest Level Detected	Range of Levels	MCLG	MCL	Units	Likely Source of Contamination
Lead	2016	Levels lower than detect level	Levels lower than	0.015	0.015	ppm	Corrosion of customer plumbing. Action Level = .015
Copper	2016	0.059	0 - 0.059	1.3	1.3	ppm	By-product of drinking water disinfection. Action Level = 1.3

**Additional Health Information For 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 home plumbing. The NTMWD 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 2 minutes before using 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 at State Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>

Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Chloroform	2016	14.4	14.4 - 14.4	ppb	By-product of drinking water disinfection.
Bromoform	2016	Levels lower than detect level	Levels lower than	ppb	By-product of drinking water disinfection.
Bromodichloromethane	2016	6.42	6.42 - 6.42	ppb	By-product of drinking water disinfection.
Dibromochloromethane	2016	2.98	2.98 - 2.98	ppb	By-product of drinking water disinfection.

**NOTE:** Bromoform, chloroform, dichlorobromomethane, and dibromochloromethane are disinfection by-products. There is no maximum contaminant level for these chemicals at the entry point to distribution.

Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Bicarbonate	2016	62.9	62.9 - 62.9	ppm	Corrosion of carbonate rocks such as limestone.
Calcium	2016	56.5	35.6 - 56.5	ppm	Abundant naturally occurring element.
Chloride	2016	13.4	8.54 - 13.4	ppm	Abundant naturally occurring element; used in water purification; by-product of oil field activity.
Hardness as Ca/Mg	2016	78.6	52.1 - 78.6	ppm	Naturally occurring calcium and magnesium.
Iron	2016	0.0388	0.0388 - 0.0388	ppm	Erosion of natural deposits; iron or steel water delivery equipment or facilities.
Magnesium	2016	3.17	2.21 - 3.17	ppm	Abundant naturally occurring element.
Manganese	2016	0.023	0.004 - 0.023	ppm	Abundant naturally occurring element.
Nickel	2016	0.004	0.002 - 0.004	ppm	Erosion of natural deposits.
pH	2016	8.20	7.4 - 8.2	units	Measure of corrosivity of water.
Sodium	2016	15.6	11.0 - 15.6	ppm	Erosion of natural deposits; by-product of oil field activity.
Sulfate	2016	78.5	57.1 - 78.5	ppm	Naturally occurring; common industrial by-product; by-product of oil field activity.
Total Alkalinity as CaCO3	2016	71	55.3 - 71.0	ppm	Naturally occurring soluble mineral salts.
Total Dissolved Solids	2016	220	150 - 220	ppm	Total dissolved mineral constituents in water.
Total Hardness as CaCO3	2016	149	97.9 - 149.0	ppm	Naturally occurring calcium.
Zinc	2016	0.006	0 - 0.006	ppm	Moderately abundant naturally occurring element used in the metal industry.

Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Cryptosporidia	2016	0	0	(Oo)cysts/L	Naturally occurring in the environment
Giardia	2016	0	0	(Oo)cysts/L	Naturally occurring in the environment

**NOTE:** Crypto/Giardia measured in the raw water.