



## City of Terrell 2011 Report to Consumers on Water Quality

The City of Terrell is proud of the fine drinking water it provides. This annual water quality report shows the source of our water, lists the results of our tests, and contains much important information about water and health. City of Terrell will notify you immediately if there is any reason for concern about our water.



### 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 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. You should seek advice about drinking water from your 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 at (800) 426-4791.

### The bottom line: Is the water safe to drink? Absolutely.

Call us for information about the next opportunity for public participation in decisions about our drinking water. Find out more about City of Terrell on this website.

### En Espanol

Este reporte incluye informacion importante sobre el agua para tomar. Para asistencia en espanol, favor de llamar al telefono (972) 551-6635.

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## Overview

### OUR DRINKING WATER IS REGULATED

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.

### YOUR DRINKING WATER IS SAFE

Providing safe and reliable drinking water is the highest priority for the City of Terrell water department. Our employees take pride in providing and delivering water to your home or business.

The information in this report is based on tests conducted through 2010.

It is important to us that you have information about your Drinking Water so you can have confidence in the product we deliver.

### Source of Drinking Water

The City of Terrell purchases treated water from North Texas Municipal Water District (NTMWD). NTMWD utilizes four reservoirs; Lavon Lake, Lake Jim Chapman, Lake Tawakoni, and Lake Texoma for their raw water supplies. The City of Terrell's Water Treatment Plant was closed on June 19, 2007.

The 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 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:

(A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and water wildlife.

(B) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

(C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, stormwater runoff, and residential uses.

(D) Organic chemical contaminants, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.

(E) Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

TCEQ completed an assessment of your source water and results indicate that some of our sources are susceptible to certain contaminants. The sampling requirements for your water are based on this susceptibility and previous sample data. Any detections of these contaminants will be

found in this Consumers Confidence report. For more information on source water assessments and protection efforts at our system contact Water Quality, (972) 551-6635.

The report showed a HIGH susceptibility for the following contaminants: Inorganics, regulated and unregulated; Volatile Organic Contaminant, regulated and unregulated; Synthetic Organic Contaminant, regulated and unregulated; Disinfection By-Product, regulated; and Microbial Organism, unregulated.

A Source Water Susceptibility Assessment for your drinking water source(s) is currently being updated by the Texas Commission on Environmental Quality. This information 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 information contained in the assessment allows us to focus source water protection strategies. Some of this source water assessment information is available on Texas Drinking Water Watch at <http://www.tceq.state.tx.us/DWW/>. For more information on source water assessments and protection efforts at our system, please contact us.

#### **ALL drinking water may contain contaminants**

When drinking water meets federal standards there may not be any health benefits to purchasing bottled water or point of use devices. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminant does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (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. The taste and odor constituents are called secondary constituents and are regulated by the State of Texas, not the EPA. These constituents are not causes for health concern. Therefore, secondary are not required to be reported in this document but they may greatly affect the appearance and taste of your water.

#### **What Do The Tables Mean?**

The tables show the results of our water-quality analyses. Every regulated contaminant that we detected in the water, even in the most minute traces, is listed here. The table contains the name of each substance, the highest level allowed by regulation (MCL), the ideal goals for public health, the amount detected, the usual sources of such contamination, footnotes explaining our findings, and a key to units of measurement. Definitions of MCL and MCLG are important.

**Maximum Contaminant Level 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 available 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 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.

**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.

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

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

#### **Key To Table**

AL = Action Level

MCL = Maximum Contaminant Level

MCLG = Maximum Contaminant Level Goal

NTU = Nephelometric Turbidity Units

pCi/l = picocuries per liter (a measure of radioactivity)

ppm = parts per million, or milligrams per liter (mg/l)

ppt = parts per trillion, or nanograms per liter

ppb = parts per billion, or micrograms per liter (µg/l)

ppq = parts per quadrillion, or picograms per liter

TT = Treatment Technique

ND = Not Detected at the Reporting Limit

### **Regulated at the Customer's Tap**

Contaminant	Year Sampled	Action Level (AL)	90th Percentile	# Sites Over AL	MCLG	Violations	Likely Source of Contaminant
Lead (ppb)	2010	15.0	3.41	0	0	No	Corrosion of household plumbing system;

							Erosion of natural deposits
Copper (ppm)	2010	1.3	.665	0	1.3	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems

#### Recommended Additional Health Information for lead

All water systems are required by EPA to report the language below starting with the 2011 CCR to be delivered to you by July of 2012. We are now providing this information as a courtesy.

“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. 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 2 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>.”

### Regulated at the Treatment Plant

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

Constituent	Year	Highest Single Measurement	Lowest monthly % of samples Meeting Limits	Turbidity Limits	Unit of Measure	Major Sources in Drinking Water
Turbidity	2011	.96	99.15	0.3	NTU	Soil runoff

### Total Organic Carbon

Contaminant	Year	Average Level	Minimum Level	Maximum Level	Unit of Measure	Source of Contaminant
Source Water	2011	4.92	4.32	6.34	ppm	Naturally present in environment
Drinking Water	2011	3.83	3.52	4.64	ppm	Naturally present in environment
Removal Ratio	2011	20%	11%	35%	% removal*	N/A

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

**Note:** Total Organic Carbon (TOC) has no health effects. The disinfectant can combine with TOC to form disinfection byproducts. Disinfection is necessary to ensure that water does not have unacceptable levels of pathogens. Byproducts of disinfection include trihalomethanes (THMs) and haloacetic acids (HAA) which are reported elsewhere in this report

### Inorganic Contaminants

Contaminant	Date Tested	Unit	MCL	MCLG	Average Level	Min. Level	Max. Level	Source of Contaminant
Gross Beta Emitters	2010	pCi/L	50	0	N/A	N/A	4.4	Decay of natural and man-made deposits.
Barium	2011	ppm	2	2	0.04	0.04	0.04	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Nitrate	2011	ppm	10	10	0.55	<0.05	0.55	Runoff from fertilizer use; Leaching from septic tanks, sewage; erosion of natural deposits.

Flouride	2011	ppm	4	4	0.66	0.46	0.66	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
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## Organic Contaminants

Contaminant	Year or Range	Average Level	Minimum Level	Maximum Level	MCL	MCLG	Unit of Measure	Source of Contaminant
Atrazine	2011	0.19	0.18	0.2	3	3	ppb	Runoff from herbicide used on row crops.
Simazine	2011	0.08	<0.07	0.16	4	4	ppb	Runoff from herbicide used on row crops.
Di (2-ethylhexyl)adipate	2011	0.37	<0.62	0.74	400	400	ppb	Discharge from chemical factories

## Maximum Residual Disinfectant Level

Year	Disinfectant	Average Level	Minimum Level	Maximum Level	MRDL	MRDLG	Unit of Measure	Source of Disinfectant
2010	Chloramine Residual	2.5	0.80	3.60	4	<4.0	ppm	Disinfectant to control microbes.
2010	Chlorine Dioxide	0	0	0.15	0.8	0.8	ppm	Disinfectant
2010	Chlorite	0.33	0.01	0.75	1.0	N/A	ppm	Disinfectant

## Disinfection by-products

Contaminant	Date Tested	Average Level	Minimum Level	Maximum Level	MCL	MCLG	Unit of Measure	Source of Contaminant
Total Haloacetic Acids	2011	18.60	16.60	20.8	60	N/A	ppb	By-product of drinking water disinfection.
Total Trihalomethanes	2011	38.60	31.60	47.9	80	N/A	ppb	By-product of drinking water disinfection.

## Unregulated Initial Distribution System Evaluation for Disinfectant Byproducts

This evaluation is sampling required by EPA to determine the range of total trihalomethane and haloacetic acid in the system for future regulations.

The samples are not used for compliance, and may have been collected under non-standard conditions. EPA also requires the data to be reported here.

Contaminant	Year	Average Level	Minimum Level	Maximum Level	MCL	Unit of Measure	Source of Contaminant
Total Haloacetic Acids	2007	44.6	13	193.2	N/A	ppb	Byproduct of drinking water disinfection.
Total Trihalomethanes	2007	81.9	18.9	297.1	N/A	ppb	Byproduct of drinking water disinfection.

## Radioactive Contaminants

Contaminant	Date Tested	Unit	MCL	MCLG	Detected Level	Range	Major Sources in Drinking Water	Violation
Gross Alpha	2009	pCi/L	15	0	ND	ND	Erosion of natural deposits	NO
Radium 228	2009	pCi/L	5	0	ND	ND	Erosion of natural deposits	NO
Gross Beta	2009	pCi/L	50	0	<4	<4	Decay of natural and man-made deposit	NO

## Synthetic Organic Contaminants Including Pesticides and Herbicides

Contaminant	Date Tested	Unit	MCL	MCLG	Detected Level	Range	Major Sources in Drinking Water	Violation
Alachlor	3/26/07	ppb	2	0	ND	ND	Runoff from herbicide used on row crops	NO
Atrazine	2007	ppb	3.0	3.0	0.2	ND-0.4	Runoff from herbicide used on row crops	NO
Benzo (a) pyrene [PAH]	3/26/07	ppt	200	0	ND	ND	Leaching from linings of water storage tanks and distribution lines	NO
Dalapon	2007	ppb	200	200	ND	ND	Runoff from herbicide used on rights of way	NO
Endrin	3/26/07	ppb	2	2	ND	ND	Residue of banned insecticide	NO
Heptachlor	3/26/07	ppt	400	0	ND	ND	Residue of banned termiticide	NO
Heptachlor epoxide	3/26/07	ppt	200	0	ND	ND	Breakdown of heptachlor	NO
Hexachlorobenzene	3/26/07	ppb	1	0	ND	ND	Discharge from metal refineries and agricultural chemical factories	NO
Hexachlorocyclopentadiene	3/26/07	ppb	50	50	ND	ND	Discharge from chemical factories	NO
Methoxychlor	3/26/07	ppb	40	40	ND	ND	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock	NO
Pentachlorophenol	3/26/07	ppb	1	0	ND	ND	Discharge from wood preserving factories	NO
Simazine	2007	ppb	4	4	ND	ND	Herbicide runoff	NO

## Secondary and Other Constituents Not Regulated (No associated adverse health effects)

Constituent	Year or Range	Average Level	Minimum Level	Maximum Level	Secondary Limit	Unit of Measure	Source of Constituent
Bicarbonate	2010	100	73	120	N/A	ppm	Corrosion of carbonate rocks such as limestone.
Calcium	2011	43	32	54	N/A	ppm	Abundant naturally occurring element.
Chloride	2011	28	25	31	300	ppm	Abundant naturally occurring element; used in water purification; byproduct of oil field activity
Copper	2010	0.09	0.04	0.13	1	ppm	Corrosion of household plumbing systems; erosions of natural deposits; leaching from wood preservatives.
Hardness as Ca/Mg	2010	174	162	185	N/A	ppm	Naturally occurring calcium and magnesium.
Iron	2011	<0.06	<0.05	0.07	0.3	ppm	Erosion of natural deposits; iron or steel water delivery equipment or facilities.
Magnesium	2011	4.1	3.9	4.3	N/A	ppm	Abundant naturally occurring element.
Manganese	2011	0.001	<0.001	0.002	0.05	ppm	Abundant naturally occurring element.
Nickel	2011	0.004	0.004	0.005	N/A	ppm	Erosion of natural deposits.

pH	2011	7.7	7.6	7.9	>7.0	units	Measure of corrosivity of water.
Sodium	2011	32	29	39	N/A	ppm	Erosion of natural deposits; byproduct of oil field activity.
Sulfate	2011	67	65	68	300	ppm	Naturally occurring; common industrial byproduct; byproduct of oil field activity.
Total Alkalinity as CaCO <sub>3</sub>	2011	88	63	104	N/A	ppm	Naturally occurring soluble mineral salts.
Total Dissolved Solids	2011	259	249	263	1000	ppm	Total dissolved mineral constituents in water.
Total Hardness as CaCO <sub>3</sub>	2011	124	95	153	N/A	ppm	Naturally occurring calcium.
Zinc	2010	<0.01	<0.01	0.17	5	ppm	Moderately abundant naturally occurring element; used in the metal industry.
Arsenic	2011	<0.001	<0.001	0.001	0.01	ppm	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronic production wastes.

## Unregulated Contaminants

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.

Constituent	Date Tested	Unit	Average Level	Minimum Level	Maximum Level	Source of Contaminant
Chloroform	2011	ppb	14.6	12.6	17.8	By-product of drinking water disinfection
Bromoform	2011	ppb	14.8	11.4	18.3	By-product of drinking water disinfection
Dibromochloromethane	2011	ppb	<1.3	<1.0	1.6	By-product of drinking water disinfection
Bromodichloromethane	2011	ppb	8.3	6.5	10.9	By-product of drinking water disinfection

### Unregulated Contaminant Monitoring Regulation (UCMR)

Availability of Unregulated Contaminant Monitoring Rule data (UCMR)

We participated in gathering data under the UCMR in order to assist EPA in determining the occurrence of possible drinking water contaminants. If any unregulated contaminants were detected, they are shown in the table elsewhere in this report.

This data may also be found by calling the Safe Drinking Water Hotline at 1-800-426-4791.

## Total Coliform

Reported monthly tests found no fecal coliform bacteria. Total coliform bacteria are used as indicators of microbial contamination of drinking water because testing from them is easy. While not disease-causing organisms themselves, they are often found in association with other microbes that are capable of causing disease. Coliform bacteria are more hardy than many disease-causing organisms; therefore, their absence from water is a good indication that the water is microbiologically safe for human consumption.

Year	Contaminant	Highest Monthly Number of Positive Samples	MCL	Unit of Measure	Source of Contaminant

2011	Total Coliform Bacteria	0	*	Presence	Naturally present in the environment.
*Two or more coliform found samples in any single month.					

**Note:** No more than 5% positive. Total coliform bacteria are used as indicators of microbial contamination of drinking water because testing is easy. While not disease-causing organisms themselves, they are often found in association with other microbes that are capable of causing diseases. Coliform bacteria are more hardy than many disease-causing organisms; therefore, their absences from water is a good indication that the water is microbiologically safe for human consumption.

## Volatile Organic Contaminants

Contaminant	Unit of Measure	Year Tested	Average Level	Minimum Level	Maximum Level	Sources of Contaminant
N-nitrosodimethylamine (NDMA)	ppb	2009	0.0023	0	0.0023	Byproduct of manufacturing process

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