

# 2014 Annual Drinking Water Quality Report

City of Plano PWS0430007 (972) 769-4160.

This report is available at [plano.gov/waterquality2014](http://plano.gov/waterquality2014).

*En Español: Este reporte incluye información importante sobre el agua potable. Si tiene preguntas o comentarios sobre este informe en español, favor de llamar al tel. (972) 769-5130 para hablar con una persona bilingüe en español.*

## Our Drinking Water is Regulated

The City of Plano wants water customers to know they receive safe, high-quality drinking water. This report is a summary of the quality of the water we provide our customers. In order to ensure tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. The City of Plano's analysis was made by using data from the most recent EPA required tests and is presented in the attached pages. Food and Drug Administration (FDA) regulations establish limits for contaminants to bottled water providing the same protection for public health.

Plano's water system has a "Superior" rating with the Texas Commission on Environmental Quality (TCEQ) and exceeds all state and federal drinking water standards. In the water loss audit submitted to the Texas Water Development Board for the time period of Jan-Dec 2014, our system lost an estimated 2,162,785,934 gallons of water (12.5%). If you have any questions about the water loss audit please call Public Works at 972-769-4160. We hope this information helps you become more knowledgeable about what's in your drinking water.

## Where Do We Get our Drinking Water?

The source of drinking water used by City of Plano is purchased surface water from the North Texas Municipal Water District (NTMWD). To contact NTMWD, call (972) 442-5405. A Source Water Assessment for your drinking water source(s) is currently being conducted by the TCEQ and should be provided to us this year. The report will describe 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 in this assessment will allow us to focus our source water protection strategies. Some of this source water assessment information is available on Texas Drinking Water Watch at [dww.tceq.state.tx.us/DWWW/](http://dww.tceq.state.tx.us/DWWW/). For more information about your sources of water, please refer to the Source Water Assessment Viewer online at <http://www.tceq.texas.gov/gis/swaview>.

## Abbreviations and Definitions

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

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

**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 Contaminant Level Goal (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 (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 (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:** million fibers per liter (a measure of asbestos)

**mrem/year:** millirems per year (a measure of radiation absorbed by the body)

**N/A:** Not applicable.

**NTU:** Nephelometric Turbidity Units.

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

**ppb:** parts per billion or micrograms per liter—or one ounce in 7,350,000 gallons of water.

**ppm:** parts per million or milligrams per liter—or one ounce in 7,350 gallons of water.

**ppt:** parts per trillion or nanograms per liter (ng/L)

**ppq:** parts per quadrillion or pictograms per liter (pg/L)

## Sources of Drinking Water

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, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and headaches.

## Possible Contaminants in Source Water

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.

- 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 or 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 also 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.

The presence of contaminants does NOT necessarily indicate your drinking water poses a health risk. For more information about contaminants and potential health effects call the EPA Safe Drinking Water Hotline at (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 secondary constituents are regulated by the State of Texas, not the EPA. They are NOT causes for health concern, but may greatly affect the appearance and taste of your 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 immuno-compromised persons (such as those undergoing chemotherapy for cancer; those who have undergone organ transplants; those who are undergoing treatment with steroids; and people with other immune system disorders) can be particularly at risk for infections. You should seek advice about drinking water from your physician or health care provider. Additional guidelines and appropriate means to lessen the risk of infection by Cryptosporidium are available from the EPA Safe Drinking Water Hotline at (800) 426-4791.

## Public Participation Opportunities

To learn more about future public meetings concerning your drinking water or about how to protect and save our water supplies, please visit [plano.gov/water](http://plano.gov/water) or [livegreeninplano.com](http://livegreeninplano.com).

## Regulated Contaminants

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Haloacetic Acids (HAA5)	2014	35.4	14.5 - 35.4	No goal for the total	60	ppb	No	By-product of drinking water disinfection.
Total Trihalomethanes (TTHm)	2014	62.5	26.5 - 62.5	No goal for the total	80	ppb	No	By-product of drinking water disinfection.
Bromate	2014	ND	ND	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 Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Antimony	2014	Levels lower than detect level	0 - 0	6	6	ppb	No	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder; and test addition.
Arsenic	2014	0.74	0.00 – 0.74	0	10	ppb	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Barium	2014	0.0425	0.0413 – 0.0425	2	2	ppm	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.

## Regulated Contaminants (continued)

Inorganic Contaminants (continued)	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Beryllium	2014	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	2014	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	2014	0	0 - 0	100	100	ppb	No	Discharge from steel and pulp mills; erosion of natural deposits.
Fluoride	2014	0.81	0.80 - 0.81	4	4	ppm	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Mercury	2014	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)	2014	2.43	0.00 – 2.43	10	10	ppm	No	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits.
<b>Nitrate Advisory:</b> 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	2014	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	2014	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 Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Beta/photon emitters	4/29/2010	4.4	4.4 - 4.4	0	50	pCi/L	No	Decay of natural and man-made deposits.
Gross alpha excluding radon and uranium	4/29/2010	Levels lower than detect level	0 - 0	0	15	pCi/L	No	Erosion of natural deposits.
Radium	NA	NA	NA	0	5	pCi/L	No	Erosion of natural deposits.
Synthetic organic contaminants including pesticides and herbicides	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Atrazine	2014	0.29	0.25 - 0.29	3	3	ppb	No	Runoff from herbicide used on row crops.
Simazine	2014	0.16	0.13 - 0.16	4	4	ppb	No	Herbicide runoff.

## Turbidity

	Limit (Treatment Technique)	Level Detected	Violation	Likely Source of Contamination
Highest single measurement	1 NTU	0.96	No	Soil runoff.
Lowest monthly percentage (%) meeting limit	0.3 NTU	99.20%	No	Soil runoff.
<b>NOTE:</b> Turbidity is a measurement of the cloudiness of the water caused by suspended particles. We monitor it because it is a good indicator of water quality and the effectiveness of our filtration.				

## Coliform Bacteria

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	No more than 5%	5	0	0	No	Naturally present in the environment.
<b>NOTE:</b> 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. Maximum level of 5% Total Coliform.						

## Lead and Copper

Contaminants	Date Sampled	MCLG	Action Level	90 <sup>th</sup> Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	2013	1.3	1.3	0.387	0	ppm	N	Corrosion of customer plumbing; erosion of natural deposits; leaching from wood preservatives.
Lead	2013	0	15	2.26	1	ppb	N	Corrosion of customer plumbing; erosion of natural deposits.

**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 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>.

## Maximum Residual Disinfectant Level

Disinfectant Type	Year	Average Level	Lowest Result of Single Sample	Highest Result of Single Sample	MRDL	MRDLG	Units	Source of Chemical
Chlorine Residual (Chloramines)	2014	2.69	0.8	3.8	4.0	<4.0	ppm	Disinfectant used to control microbes.
Chlorine Dioxide	2014	<0.10	0	0.51	0.8	0.8	ppm	Disinfectant.
Chlorite	2014	0.05	0.0	0.51	1.0	N/A	ppm	Disinfectant.

## Disinfection Byproducts

Unregulated Contaminant Monitoring Rule 1 (UCMR1)					
Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Chloroform	2014	16.4	6.7–16.4	ppb	By-product of drinking water disinfection.
Bromoform	2014	4.1	1.5 – 4.1	ppb	By-product of drinking water disinfection.
Bromodichloromethane	2014	28.8	10.4 – 28.8	ppb	By-product of drinking water disinfection.
Dibromochloromethane	2014	18.5	7.4 – 18.5	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.

Unregulated Contaminant Monitoring Rule 2 (UCMR2)					
Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
N-nitrosodimethylamine (NDMA)	2009	0.0023	0 - 0.0023	ppb	By-product of manufacturing process.

**NOTE:** 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 regulations.

## Total Organic Carbon

	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Source Water	2014	5.99	4.63 - 5.99	ppm	Naturally present in the environment.
Drinking Water	2014	5.02	3.44 - 5.02	ppm	Naturally present in the environment.
Removal Ratio	2014	39.0%	10.5 - 39.0%	% 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.

## Secondary and Other Constituents Not Regulated

Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Bicarbonate	2014	92.3	90.9 – 92.3	ppm	Corrosion of carbonate rocks such as limestone.
Calcium	2014	54.4	52.5 – 54.4	ppm	Abundant naturally occurring element.
Chloride	2014	44.8	44.6 – 44.8	ppm	Abundant naturally occurring element; used in water purification; by-product of oil field activity.
Hardness as Ca/Mg	2014	86	60 - 86	ppm	Naturally occurring calcium and magnesium.
Iron	2014	0.21	0.00 – 0.21	ppm	Erosion of natural deposits; iron or steel water delivery equipment or facilities.
Magnesium	2014	4.55	4.38 - 4.55	ppm	Abundant naturally occurring element.
Manganese	2014	0.0011	0.0008 - 0.0011	ppm	Abundant naturally occurring element.
Nickel	2014	0.0039	0.0038 - 0.0039	ppm	Erosion of natural deposits.
pH	2014	9.4	7.2 – 9.4	units	Measure of corrosivity of water.
Sodium	2014	60.1	58.6 – 60.1	ppm	Erosion of natural deposits; by-product of oil field activity.
Sulfate	2014	107	105 – 107	ppm	Naturally occurring; common industrial by-product; by-product of oil field activity.
Total Alkalinity as CaCO <sub>3</sub>	2014	108	54 – 108	ppm	Naturally occurring soluble mineral salts.
Total Dissolved Solids	2014	494	344 – 494	ppm	Total dissolved mineral constituents in water.
Total Hardness as CaCO <sub>3</sub>	2014	215	150 – 215	ppm	Naturally occurring calcium.
Zinc	2014	0.01	0.00 - 0.01	ppm	Moderately abundant naturally occurring element used in the metal industry.

### Ozonation

North Texas Municipal Water District completed implementation of ozone for primary disinfection at the Wylie Water Treatment Plants in 2014 for compliance with the Disinfection By-Products 2 Rule (DBP2). The DBP2 Rule changed the compliance criteria for trihalomethanes and haloacetic acids which are created when chlorine is used as the primary disinfectant. Ozone is also effective in treating taste and odor compounds associated with the District's surface water sources. Accordingly, consumers should notice an improved taste and odor of their water.

### Chloramines

North Texas Municipal Water District uses Chloramines for disinfection purposes. The benefit of using Chloramines is to reduce the levels of disinfection byproducts in the system, while still providing protection from waterborne disease.

The use of Chloramines can cause problems to persons dependent on dialysis machines. A condition known as hemolytic anemia can occur if the disinfectant is not completely removed from the water that is used for the dialysate. Consequently, the pretreatment scheme used for the dialysis units must include some means, such as a charcoal filter, for removing the Chloramine from the water used. Medical facilities should also determine if additional precautions are required for other medical equipment. In addition, Chloraminated water may be toxic to fish. If you have a fish tank, please make sure that the chemicals or filters that you are using are designed for use in water that has been treated with Chloramines. You may also need to change the type of filter that you use for fish tanks.

Please share this information with all people who drink this water, especially those who may not have received this notice directly (i.e., people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

If you have questions regarding this matter, you may contact Gerald Cosgrove at (972) 769-4276.

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