



Plano

2015

**WATER QUALITY
REPORT**

plano.gov/waterquality2015

2015 Annual Drinking Water Quality Report

for the period of January 1 to December 31, 2015

City of Plano TX0430007 (972) 769-4160
This report is available at plano.gov/waterquality2015.

En español: Este reporte incluye información importante sobre el agua para tomar. Para asistencia en español, favor de llamar al telefono (972) 769-5130 para hablar con una persona bilingüe en español.

Safe, High-Quality Drinking Water

The City of Plano wants its water customers to know that they receive safe, high-quality drinking water that is regulated to the highest standards. Plano's water system has a "Superior" rating with the Texas Commission on Environmental Quality (TCEQ), and it exceeds all state and federal drinking water standards.

This report is intended to provide you with important information about your drinking water and the efforts made by the water system to provide safe drinking water. It summarizes the quality of the water we provide to our customers. In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The City of Plano's analysis was done using data from the most recent EPA required tests and is presented in the pages that follow. We hope this information helps you become more knowledgeable about what is in your drinking water. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, providing the same protection for public health.

Where does our drinking water come from?

The City of Plano purchases surface water from the North Texas Municipal Water District (NTMWD). NTMWD supplies water to approximately 1.6 million people in 13 member cities and 34 customer systems in eight counties. NTMWD gets raw water from Lavon Lake and treats it at the Wylie Water Treatment Plant. In addition to Lavon Lake, NTMWD holds water rights in Lake Texoma, Jim Chapman Lake (Cooper Lake), Lake Tawakoni and the East Fork Raw Water Supply Project (Wetland), which augment supplies. Please visit NTMWD's website at ntmwd.com or call NTMWD at (972) 442-5405 for detailed information on our water sources, treatment processes and more.

A Source Water Assessment for your drinking water source(s) is currently being updated 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 contained in the assessment will allow us to focus source water protection strategies. Some of this source water assessment information will be available later this year on Texas Drinking Water Watch at <http://dww2.tceq.texas.gov/DWW/>. Please refer to the Source Water Assessment Viewer online at <http://www.tceq.texas.gov/gis/swaview> for more information about your sources of water. Please contact NTMWD or the City of Plano for more information on source water assessments and protection efforts.

Special Notice Regarding Cryptosporidium

NTMWD has tested lake water and treated water for the presence of *Cryptosporidium*, a protozoan that affects the digestive tract, for several years. *Cryptosporidium* has been absent in all samples tested. 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 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 and appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the EPA Safe Drinking Water Hotline at (800) 426-4791.

Water Loss Audit Findings

In the water loss audit submitted to the Texas Water Development Board (TWDB) for the time period of January 1 – December 31, 2015, our system lost an estimated 3,074,491,588 gallons of water (15.3%). Please call Public Works at (972) 769-4160 if you have questions about the water loss audit.

Possible Contaminants in Sources of Drinking Water

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.

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.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, 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 byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems.
- Radioactive contaminants can be naturally occurring or the result of oil and gas production and mining activities.

The presence of contaminants does not necessarily indicate that 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.

Implications of Secondary Constituents

Secondary constituents, such as calcium, sodium or iron, which are often found in drinking water, can cause taste, color or odor problems. These secondary constituents are regulated by the State of Texas, not the EPA. They are not causes for health concern, and they are not required to be reported in this document. However, they may affect the appearance and taste of your drinking water.

Abbreviations and Definitions to Know

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.

Avq: Regulatory compliance with some MCLs are based on running annual average of monthly samples.

cysts/L: cysts per liter.

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 (a measure of turbidity)

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

ppb: parts per billion or micrograms per liter ($\mu\text{g/L}$)—or one ounce in 7,350,000 gallons of water.

ppm: parts per million or milligrams per liter (mg/L)—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)

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

Turbidity: A measure of water's clarity. Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Water with lower turbidity is clearer than water with higher turbidity

Ozonation

NTMWD 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

NTMWD 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.

Public Participation Opportunities

NTMWD Board of Directors' meetings are held on the fourth Thursday of each month with adjustments made for holidays or other conflicts. Visit ntmwd.com or call (972) 442-5405 for a schedule of Board of Directors' meetings.

Please visit plano.gov/water or livegreeninplano.com to learn more about future public meetings concerning your drinking water or about how to protect and save our water supplies.

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 by distributing copies by hand or mail.

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

This report was posted/delivered on June 1, 2016.

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)	2015	51.5	13.6-51.5	No goal for the total	60	ppb	No	By-product of drinking water disinfection.
Total Trihalomethanes (TTHm)	2015	56.1	29.1-56.1	No goal for the total	80	ppb	No	By-product of drinking water disinfection.
Bromate	2015	8.9	0.0 - 8.9	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	2015	0.2	0-0.2	6	6	ppb	No	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder; and test addition.
Arsenic	2015	0.7	0.0-0.7	0	10	ppb	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Barium	2015	0.055	0.039-0.055	2	2	ppm	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Beryllium	2015	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.

Regulated Contaminants (continued)

Inorganic Contaminants (continued)	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Cadmium	2015	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	2015	0.92	0.53 - 0.92	100	100	ppb	No	Discharge from steel and pulp mills; erosion of natural deposits.
Fluoride	2015	0.86	0.25 - 0.86	4	4	ppm	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Mercury	2015	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)	2015	1.79	0.05 - 1.79	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	2015	2	0 - 2	50	50	ppb	No	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
Thallium	2015	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	N/A	N/A	N/A	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	2015	0.19	0.13-0.19	3	3	ppb	No	Runoff from herbicide used on row crops.
Di (2-ethylhexyl) phthalate	2015	0.7	0.0 - 0.7	0	6	ppb	No	Discharge from rubber and chemical factories.

Turbidity

	Limit (Treatment Technique)	Level Detected	Violation	Likely Source of Contamination
Highest single measurement	1 NTU	0.65 NTU	No	Soil runoff.
Lowest monthly percentage (%) meeting limit	0.3 NTU	99.00%	No	Soil runoff.
NOTE: 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.				

Total Organic Carbon

	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Source Water	2015	7.6	3.82 - 7.60	ppm	Naturally present in the environment.
Drinking Water	2015	6.32	1.45 - 6.32	ppm	Naturally present in the environment.
Removal Ratio	2015	62.0%	21.9 - 62.0	% 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.

Coliform Bacteria

Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Highest No. of Positive Samples in One Month	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% of monthly samples are positive	4	0	0	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. Maximum level of 5% Total Coliform.

Lead and Copper

Contaminants	Date Sampled	MCLG	Action Level	90 th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	2013	1.3	1.3	0.387	0	ppm	No	Corrosion of customer plumbing; erosion of natural deposits; leaching from wood preservatives.
Lead	2013	0	15	2.26	1	ppb	No	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>.

Cryptosporidium and Giardia

Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Cryptosporidium	2015	0	0 – 0	(Oo) Cysts/L	Human and animal fecal waste.
Giardia	2015	0	0 – 0	(Oo) Cysts/L	Human and animal fecal waste.

Note: Taken on raw water samples.

Maximum Residual Disinfectant Level

Disinfectant Type	Year	Average Level of Quarterly Data	Lowest Result of Single Sample	Highest Result of Single Sample	MRDL	MRDLG	Units	Source of Chemical
Chlorine Residual (Chloramines)	2015	2.81	0.9	4.0	4.0	<4.0	ppm	Disinfectant used to control microbes.
Chlorine Dioxide	2015	0	0	0.03	0.8	0.8	ppm	Disinfectant.
Chlorite	2015	0.03	0	0.33	1.0	N/A	ppm	Disinfectant.

Disinfection Byproducts

Unregulated Contaminants					
Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Chloroform	2015	27.7	6.30-27.7	ppb	By-product of drinking water disinfection.
Bromoform	2015	6.00	<1.0-6.00	ppb	By-product of drinking water disinfection.
Bromodichloromethane	2015	29.6	11.1-29.6	ppb	By-product of drinking water disinfection.
Dibromochloromethane	2015	12.90	5.55-12.90	ppb	By-product of drinking water disinfection.
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 are warranted.

Secondary and Other Constituents Not Regulated

Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Calcium	2015	113	45.3 - 113	ppm	Abundant naturally occurring element.
Chloride	2015	143	16.1 - 142	ppm	Abundant naturally occurring element; used in water purification; by-product of oil field activity.
Hardness as Ca/Mg	2015	190	106 - 190	ppm	Naturally occurring calcium and magnesium.
Iron	2015	< 0.02	0 - 0	ppm	Erosion of natural deposits; iron or steel water delivery equipment or facilities.
Magnesium	2015	9.36	3.22 - 9.36	ppm	Abundant naturally occurring element.
Manganese	2015	0.011	0.0014 - 0.011	ppm	Abundant naturally occurring element.
Nickel	2015	0.0065	0.0028 - 0.0065	ppm	Erosion of natural deposits.
pH	2015	9.88	6.75 - 9.88	units	Measure of corrosivity of water.
Sodium	2015	60.1	53.2 - 76.7	ppm	Erosion of natural deposits; by-product of oil field activity.
Sulfate	2015	117	110 - 1177	ppm	Naturally occurring; common industrial by-product; by-product of oil field activity.
Total Alkalinity as CaCO ₃	2015	154	38 - 154	ppm	Naturally occurring soluble mineral salts.
Total Dissolved Solids	2015	620	158 - 620	ppm	Total dissolved mineral constituents in water.
Total Hardness as CaCO ₃	2015	300	100 - 300	ppm	Naturally occurring calcium.
Zinc	2015	0.004	0.000 - 0.004	ppm	Moderately abundant naturally occurring element used in the metal industry.