

ANNUAL WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2018



Presented By



CITY OF
MURPHY

LIFE LIVED AT YOUR PACE

Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2018. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please remember that we are always available should you ever have any questions or concerns about your water.

Source Water Assessment

The Texas Commission on Environmental Quality (TCEQ) has completed a source water susceptibility assessment for all drinking water systems that own their sources. This report describes the susceptibility and types of constituents that may come into contact with the 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 for our system, contact NTMWD at 501 East Brown Street, Wylie, TX 75098 or call (972) 442-5405.

Important Health Information

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.



Community Participation

You are invited to participate in our regular public forums and voice your concerns about your drinking water. The City Council meets the first and third Tuesday of each month at 6 p.m. at City Hall, Council Chambers, 206 North Murphy Road, Murphy, Texas.

Where Does My Water Come From?

The City of Murphy and 60 other North Texas communities receive drinking water from the North Texas Municipal Water District (NTMWD). More than 1.6 million citizens rely on the treated water supply provided by NTMWD. Murphy's water is mainly from Lavon Lake. The NTMWD water treatment plants in Wylie, Texas, provide billions of gallons of clean drinking water every year to their customers like the City of Murphy. Lavon Lake serves as NTMWD's main raw water supply source, and NTMWD holds water rights in the reservoir. Lavon Lake also serves as a terminal reservoir for additional supplies that are transferred in to augment supplies from Lake Texoma, Jim Chapman Lake, Lake Bonham, and the East Fork Wetland Project. Additional supplies are available through contracts with the Sabine River Authority, providing for water transfer to Lavon Lake from Lake Tawakoni, and the Greater Texoma Utility Authority, for additional supplies from Lake Texoma.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Customer Service at (972) 468-4100.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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 can acquire naturally occurring minerals, in some cases, radioactive material; and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater 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 stormwater runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and which may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

Contaminants may be found in drinking water that may cause taste, color, or odor problems. These types of problems are not necessarily causes for health concerns. For more information on taste, odor, or color of drinking water, please contact our business office. For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Water Loss Audit

In the water loss audit submitted to the Texas Water Development Board during the year covered by this report, our system lost an estimated 456 million gallons of water. If you have any questions about the water loss audit, please call PWS phone number.

Lead in Home Plumbing

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 we 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 at (800) 426-4791 or at www.epa.gov/safewater/lead.

We remain vigilant in delivering the best-quality drinking water

Table Talk

Get the most out of the Testing Results data table with this simple suggestion. In less than a minute, you will know all there is to know about your water:

For each substance listed, compare the value in the Amount Detected column against the value in the MCL (or AL, SCL) column. If the Amount Detected value is smaller, your water meets the health and safety standards set for the substance.

Other Table Information Worth Noting

Verify that there were no violations of the state and/or federal standards in the Violation column. If there was a violation, you will see a detailed description of the event in this report.

If there is an ND or a less-than symbol (<), that means that the substance was not detected (i.e., below the detectable limits of the testing equipment).

The Range column displays the lowest and highest sample readings. If there is an NA showing, that means that only a single sample was taken to test for the substance (assuming there is a reported value in the Amount Detected column).

If there is sufficient evidence to indicate from where the substance originates, it will be listed under Typical Source.

Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

The percentage of total organic carbon (TOC) removal was measured each month, and the system met all TOC removal requirements set.

In 2018 NTMWD, our wholesale provider, failed to send letters to participants in the lead and copper monitoring program within the required time frame. The violation occurred on December 30, 2017, and was corrected on April 16, 2018, when notifications were sent to participants in the lead and copper program, which addresses the monitoring requirements with TCEQ. This violation does not pose a safety risk to our customers.

REGULATED SUBSTANCES							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Atrazine (ppb)	2018	3	3	0.2	0.2–0.3	No	Runoff from herbicide used on row crops
Barium (ppm)	2018	2	2	0.068	0.058–0.068	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Beta/Photon Emitters (pCi/L)	2018	50 ¹	0	8	8–8	No	Decay of natural and man-made deposits
Bromate (ppb)	2018	10	0	ND	NA	No	By-product of drinking water disinfection
Chloramines (ppm)	2018	[4]	[4]	2.9	0.9–3.9	No	Water additive used to control microbes
Chlorine Dioxide (ppb)	2018	[800]	[800]	ND	NA	No	Disinfectant
Chlorite (ppm)	2018	1	0.8	0.012	ND–0.48	No	Disinfectant
Fluoride (ppm)	2018	4	4	0.264	ND–0.264	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs] (ppb)	2018	60	NA	30.1	16.4–30.1	No	By-product of drinking water disinfection
Nitrate (ppm)	2018	10	10	0.503	0.022–0.503	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Radium (pCi/L)	2018	5	0	ND	NA	No	Erosion of natural deposits
Simazine (ppb)	2018	4	4	0.13	ND–0.13	No	Herbicide runoff
Total Organic Carbon (% removal)	2018	TT	NA	54.4	26.5–54.4	No	NA
TTHMs [Total Trihalomethanes] (ppb)	2018	80	NA	38.8	18.1–38.8	No	By-product of drinking water disinfection
Turbidity ² (NTU)	2018	TT	NA	0.45	0.45–0.45	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2018	TT = 95% of samples meet the limit	NA	99.1	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2017	1.3	1.3	0.63	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2017	15	0	2	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2018	300	NA	93.7	30.8–93.7	No	Naturally occurring; Water purification; By-product of oilfield activity
Iron (ppb)	2018	300	NA	ND	NA	No	Leaching from natural deposits; Industrial wastes
Manganese (ppb)	2018	50	NA	6.4	3.7–6.4	No	Leaching from natural deposits
Silver (ppb)	2018	100	NA	1	ND–1	No	Industrial discharges
Sulfate (ppm)	2018	300	NA	134	86–134	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2018	1,000	NA	556	288–556	No	Runoff/leaching from natural deposits
Zinc (ppm)	2018	5	NA	ND	NA	No	Runoff/leaching from natural deposits; Industrial wastes
pH (Units)	2018	>7.0	NA	8.51	7.83–8.51	No	Naturally occurring

UNREGULATED AND OTHER SUBSTANCES ³

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Calcium (ppm)	2018	55.3	43.6–55.3	Naturally occurring
Magnesium (ppm)	2018	9.61	9.18–9.61	Naturally occurring
Nickel (ppm)	2018	0.0055	0.0053–0.0055	Erosion of natural deposits
Sodium (ppm)	2018	88.6	86.8–88.6	Erosion of natural deposits; By-product of oilfield activity
Total Alkalinity [as CaCO ₃] (ppm)	2018	101	65–101	Naturally occurring
Total Hardness [as CaCO ₃] (ppm)	2018	188	105–188	Naturally occurring

¹ The MCL for beta particles is 4 mrem/year. U.S. EPA considers 50 pCi/L to be the level of concern for beta particles.

² Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

³ Unregulated contaminants are those for which U.S. EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist U.S. EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

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

MCL (Maximum Contaminant Level): 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.

MCLG (Maximum Contaminant Level Goal): 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.

MRDL (Maximum Residual Disinfectant Level): 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.

MRDLG (Maximum Residual Disinfectant Level Goal): 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.

NA: Not applicable.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

SCL (Secondary Contaminant Level): These standards are developed to protect aesthetic qualities of drinking water and are not health based.

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