

ANNUAL WATER QUALITY REPORT

Reporting Year 2022

Presented By



Este reporte incluye información importante sobre el agua para tomar.
Para asistencia en español, favor de llamar al telefono (972) 468-4100.

PWS ID#: 0430042



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, 2022. 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.

Testing for *Cryptosporidium*

Cryptosporidium is a microbial parasite found in surface water throughout the U.S. Although filtration removes *Cryptosporidium*, the most commonly used filtration methods cannot guarantee 100-percent removal. Monitoring of source or finished water indicates the presence of these organisms. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks; however, immunocompromised people are at greater risk of developing life-threatening illness. We encourage immunocompromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

“Thousands have lived without love, not one without water.”
—W.H. Auden

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 two 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.

Important Health Information

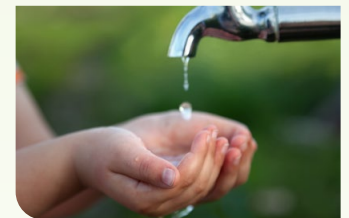
You may be more vulnerable than the general population to certain microbial contaminants, such as *Cryptosporidium*, in drinking water. Infants, some elderly, or immunocompromised persons such as those undergoing chemotherapy for cancer; those who have undergone organ transplants; those who are undergoing 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.

Source Water Assessment

The Texas Commission on Environmental Quality 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 at our system, contact NTMWD at 501 East Brown Street, Wylie, TX 75098, or (972) 442-5405.



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 at (972) 468-4100. 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 460,886,538 gallons of water. If you have any questions about the water loss audit, please call (972) 468-4100.

Water Treatment Process

The treatment process consists of a series of steps. First, raw water is drawn from our water source and sent to an aeration tank, which allows for oxidation of high iron levels. The water then goes to a mixing tank where polyaluminum chloride and soda ash are added. The addition of these substances causes small particles, called floc, to adhere to one another, making them heavy enough to settle into a basin from which sediment is removed. Chlorine is then added for disinfection. At this point, the water is filtered through layers of fine coal and silicate sand. As smaller suspended particles are removed, turbidity disappears and clear water emerges.

Chlorine is added again as a precaution against any bacteria that may still be present. (We carefully monitor the amount of chlorine, adding the lowest quantity necessary to protect the safety of your water without compromising taste.) Finally, soda ash (to adjust the final pH and alkalinity), fluoride (to prevent tooth decay), and a corrosion inhibitor (to protect distribution system pipes) are added before the water is pumped to sanitized underground reservoirs and water towers and into your home or business.

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 6:00 p.m. at City Hall, Council Chambers, 206 North Murphy Road.



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 percentage of total organic carbon (TOC) removal was measured each month, and the system met all TOC removal requirements set (unless a TOC violation is noted in the Violation column).

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.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Atrazine (ppb)	2022	3	3	0.12	0.10–0.12	No	Runoff from herbicide used on row crops
Barium (ppm)	2022	2	2	0.061	0.060–0.061	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beta/Photon Emitters (pCi/L)	2022	50 ¹	0	4.7	4.7–4.7	No	Decay of natural and human-made deposits
Bromate (ppb)	2022	10	0	4.9	4.9–4.9	No	By-product of drinking water ozonation
Chloramines (ppm)	2022	[4]	[4]	4.0	0.5–4.0	No	Water additive used to control microbes
Chlorite (ppm)	2022	1	0.8	0.145	ND–0.72	No	By-product of drinking water disinfection
Fluoride (ppm)	2022	4	4	0.688	0.278–0.688	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs]–Stage 1 (ppb)	2022	60	NA	25.5	15.9–25.5	No	By-product of drinking water disinfection
Nitrate (ppm)	2022	10	10	0.439	0.158–0.439	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
TTHMs [total trihalomethanes]–Stage 1 (ppb)	2022	80	NA	25.5	15.9–25.5	No	By-product of drinking water disinfection
Turbidity ² (NTU)	2022	TT	NA	1	0.3–1	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)	2020	1.3	1.3	0.6	0/30	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	2020	15	0	1.3	0/30	No	Lead service lines; corrosion of household plumbing systems, including fittings and fixtures; erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2022	300	NA	107	30.0–107	No	Abundant naturally occurring element; used in water purification; by-product of oilfield activity
Manganese (ppb)	2022	50	NA	9.70	9.61– 9.70	No	Abundant naturally occurring element
pH (units)	2022	>7.0	NA	9.2	7.0–9.2	No	NA
Sulfate (ppm)	2022	300	NA	171	84.2–171	No	Naturally occurring; common industrial by-product; by-product of oilfield activity
Total Dissolved Solids [TDS] (ppm)	2022	1,000	NA	492	269–492	No	Total dissolved mineral constituents in water

UNREGULATED SUBSTANCES³

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromodichloromethane (ppb)	2022	17.4	9.75–17.4	By-product of drinking water disinfection
Bromoform (ppb)	2022	4.47	1.21–4.47	By-product of drinking water disinfection
Chloroform (ppb)	2022	14.2	9.3–14.2	By-product of drinking water disinfection
Dibromochloromethane (ppb)	2022	14.4	5.91–14.4	By-product of drinking water disinfection
Nickel (ppm)	2022	0.0098	0.0069–0.0098	Erosion of natural deposits
Sodium (ppm)	2022	95.4	26.5–95.4	Erosion of natural deposits; by-product of oilfield activity

OTHER UNREGULATED SUBSTANCES³

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Calcium (ppm)	2022	69.8	32.2–69.8	Abundant naturally occurring element
HAA6Br (ppb)	2020	21.202	13.385–21.202	NA
HAA9 (ppb)	2020	43.762	21.825–43.762	NA
Magnesium (ppm)	2022	9.70	9.61–9.70	Abundant naturally occurring element
Total Alkalinity [as CaCO₃] (ppm)	2022	139	69–139	Naturally occurring soluble mineral salts
Total Hardness [as CaCO₃] (ppm)	2022	194	90–194	Naturally occurring calcium

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

²Turbidity is a measure 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.

³Unregulated 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.

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 Lake Lavon. The NTMWD water treatment plants are in Wylie. These treatment facilities provide billions of gallons of clean drinking water every year to customers like the City of Murphy. Lavon Lake serves as NTMWD's main raw water supply source; NTMWD holds water rights to the reservoir. Lavon Lake also serves as a terminal reservoir for additional supplies that are transferred to augment supplies from Lake Texoma, Jim Chapman Lake, Lake Bonham, and the East Fork Wetland Project. Additional supplies are available through a contract with the Sabine River Authority, providing for water transfer to Lavon Lake from Lake Tawakoni and a contract with the Greater Texoma Utility Authority for additional supplies from Lake Texoma.

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.

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.

