

2016 Annual

Drinking Water

Quality Report



Consumer Confidence Report Period January 1 to December 31, 2016

BEAR CREEK SUD

Phone No: 972-843-2101

PWS ID# 0430037

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 and

other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Public Participation Opportunities

Date: 2nd Tuesday of each month

Time: 7:00 P.M.

Location: 16881 C. R. 541
Lavon, TX 75166

Phone No: 972-843-2101

Website: www.bearcreeksud.com

If you have questions about this report or concerning your water utility, please contact Camille Reagan, General Manager, by calling (972) 843-2101 or writing to: P.O. Box 188, Lavon, TX 75166. You may also send email to h20@bearcreeksud.com.

WATER SOURCES: 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. Contaminants that may be present in source water before treatment include:

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.

Where do we get our drinking water?

Our drinking water is SURFACE water purchased from North Texas Municipal Water District (NTMWD). It comes from **LAVON LAKE**. A Source Water Susceptibility Assessment for your drinking water sources(s) is currently being updated by the TCEQ and should be provided to us this year. 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. Further details about sources and source-water assessments are available on Texas Drinking Water Watch at <http://www.tceq.texas.gov/gis/swaview>. Bear Creek SUD's Source Water is North Texas MWD (TX0430044), Lake Lavon. Further details about sources and source-water assessments are available in Drinking Water Watch at the following URL: <http://dww2.tceq.texas.gov/DWW/>.

ALL drinking water may contain contaminants.

When drinking water meets federal standards there may not be any health based 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 contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791).

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, secondaries are not required to be reported in this document but they may greatly affect the appearance and taste of your water.

About The Following Section

The section that follows list all of the federally regulated or monitored contaminants which have been found in your drinking water. The U. S. EPA requires water systems to test for up to 97 contaminants.

DEFINITIONS

Maximum Contaminant Level (MCL)

The highest permissible level of a contaminant 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 health risk. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL)

The highest level of 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 contamination.

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

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

N/A: not applicable.

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

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

ABBREVIATIONS

NTU –	Nephelometric Turbidity Units
MFL –	million fibers per liter (a measure of asbestos)
pCi/L –	picocuries per liter (a measure of radioactivity)
ppm -	parts per million, or milligrams per liter (mg/L) or one ounce in 7,350 gallons of water
ppb -	parts per billion, or micrograms per liter (µg/L) or one ounce in 7,350,000 gallons of water
ppt -	parts per trillion, or nanograms per liter (ng/L)
ppq -	parts per quadrillion, or picograms per liter (pg/L)

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	1 positive monthly sample	1	0	0	N	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.

Lead and Copper

Definitions:

Action Level Goal (ALG): The level of a contaminant in drinking water below which there is no known or expected risk to health. ALGs allow for a margin of safety.

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

Lead and Copper	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	2016	1.3	1.3	0.83	1	ppm	N	Erosion of natural deposits; leaching from wood preservatives; corrosion of household plumbing systems.
Lead	2016	0	15	2.9	0	ppb	N	Corrosion of household plumbing systems; 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. Bear Creek SUD 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>.

Disinfectant Residual Table

Disinfectant	Year	Average Level	Minimum Level	Maximum Level	MRDL	MRDLG	Units	Violation	Likely Source of Contamination
Chlorine Residual	2016	2.92	0.55	4.2	4.0	<4.0	ppm	N	Disinfectant used to control microbes.

Regulated Contaminants

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Total Haloacetic Acids (HAA5)	2016	25	14.1-23.3	No goal for the total	60	ppb	No	By-product of drinking water disinfection.
Total Trihalomethanes (TTHM)	2016	36	21.5-35.9	No goal for the total	80	ppb	No	By-product of drinking water disinfection.

Inorganic Contaminants

Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Nitrate (measured as Nitrogen)	2016	1	0.27-0.527	10	10	ppm	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

2016 Water Quality Results – Wylie Water Treatment Plants

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	1 positive monthly sample	1	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.

Regulated Contaminants

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Total Haloacetic Acids (HAA5)	2016	15	14.9-14.9	No goal for the total	60	ppb	No	By-product of drinking water disinfection.
Total Trihalomethanes (TTHM)	2016	38	38.3-38.3	No goal for the total	80	ppb	No	By-product of drinking water disinfection.
Bromate	2016	6	0.0-6.0	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	2016	Levels lower than detect level	0 - 0	6	6	ppb	No	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder; and test addition.
Arsenic	2016	0.9	0.0 - 0.9	0	10	ppb	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Barium	2016	0.061	0.042-0.061	2	2	ppm	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Beryllium	2016	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	2016	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	2016	1.2	0.52 - 1.20	100	100	ppb	No	Discharge from steel and pulp mills; erosion of natural deposits.
Fluoride	2016	0.93	0.13-0.93	4	4	ppm	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Mercury	2016	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)	2016	0.79	0.05-0.79	10	10	ppm	No	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits.
Selenium	2016	3.4	1.4-3.4	50	50	ppb	No	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
Thallium	2016	Levels lower than detect level	0 - 0	0.5	2	ppb	No	Discharge from electronics, glass, and leaching from ore-processing sites; drug factories.

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.

Radioactive Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Beta/photon emitters	5/2/2016	5.6	5.6-5.6	0	50	pCi/L	No	Decay of natural and man-made deposits.
Gross alpha excluding radon and uranium	5/2/2016	Levels lower than detect level	0-0	0	15	pCi/L	No	Erosion of natural deposits.
Radium	5/2/2016	Levels lower than detect level	0-0	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
2, 4, 5 - TP (Silvex)	2016	Levels lower than detect level	0 - 0	50	50	ppb	No	Residue of banned herbicide.
2, 4 - D	2016	Levels lower than detect level	0 - 0	70	70	ppb	No	Runoff from herbicide used on row crops.
Alachlor	2016	Levels lower than detect level	0 - 0	0	2	ppb	No	Runoff from herbicide used on row crops.
Altrazine	2016	0.61	0.31 - 0.61	3	3	ppb	No	Runoff from herbicide used on row crops
Benzo (a) pyrene	2016	Levels lower than detect level	0 - 0	0	200	ppt	No	Leaching from linings of water storage tanks and distribution lines.
Carbofuran	2016	Levels lower than detect level	0 - 0	40	40	ppb	No	Leaching of soil fumigant used on rice and alfalfa.
Chlordane	2016	Levels lower than detect level	0 - 0	0	2	ppb	No	Residue of banned termiticide.
Dalapon	2016	Levels lower than detect level	0 - 0	200	200	ppb	No	Runoff from herbicide used on rights of way.
Di (2-ethylhexyl) adipate	2016	Levels lower than detect level	0 - 0	400	400	ppb	No	Discharge from chemical factories.
Di (2-ethylhexyl) phthalate	2016	Levels lower than detect level	0-0	0	6	ppb	No	Discharge from rubber and chemical factories.
Dibromochloropropane (DBCP)	2016	Levels lower than detect level	0 - 0	0	0	ppt	No	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards.
Dinoseb	2016	Levels lower than detect level	0 - 0	7	7	Ppb	No	Runoff from herbicide used on soybeans and vegetables.
Endrin	2016	Levels lower than detect level	0 - 0	2	2	ppb	No	Residue of banned insecticide.
Ethylene dibromide	2016	Levels lower than detect level	0 - 0	0	50	ppt	No	Discharge from petroleum refineries.
Heptachlor	2016	Levels lower than detect level	0 - 0	0	400	ppt	No	Residue of banned termiticide.
Heptachlor epoxide	2016	Levels lower than detect level	0 - 0	0	200	ppt	No	Breakdown of heptachlor.
Hexachlorobenzene	2016	Levels lower than detect level	0 - 0	0	1	ppb	No	Discharge from metal refineries and agricultural chemical factories.
Hexachlorocyclopentadiene	2016	Levels lower than detect level	0 - 0	50	50	ppb	No	Discharge from chemical factories.
Lindane	2016	Levels lower than detect level	0 - 0	200	200	ppt	No	Runoff/leaching from insecticide used on cattle, lumber, and gardens.
Methoxychlor	2016	Levels lower than detect level	0 - 0	40	40	ppb	No	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, and livestock.
Oxamyl (Vydate)	2016	Levels lower than detect level	0 - 0	200	200	ppb	No	Runoff/leaching from insecticide used on apples, potatoes, and tomatoes.

Pentachlorophenol	2016	Levels lower than detect level	0 - 0	0	1	ppb	No	Discharge from wood preserving factories.
Simazine	2016	Levels lower than detect level	0 - 0	4	4	ppb	No	Herbicide runoff.
Toxaphene	2016	Levels lower than detect level	0 - 0	0	3	ppb	No	Runoff/leaching from insecticide used on cotton and cattle.

Volatile Organic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
1, 1, 1 - Trichloroethane	2016	Levels lower than detect level.	0 - 0	200	200	ppb	No	Discharge from metal degreasing sites and other factories.
1, 1, 2 - Trichloroethane	2016	Levels lower than detect level.	0 - 0	3	5	ppb	No	Discharge from industrial chemical factories.
1, 1 - Dichloroethylene	2016	Levels lower than detect level.	0 - 0	7	7	ppb	No	Discharge from industrial chemical factories.
1, 2, 4 - Trichlorobenzene	2016	Levels lower than detect level.	0 - 0	70	70	ppb	No	Discharge from textile-finishing factories.
1, 2 - Dichloroethane	2016	Levels lower than detect level.	0 - 0	0	5	ppb	No	Discharge from industrial chemical factories.
1, 2 - Dichloropropane	2016	Levels lower than detect level.	0 - 0	0	5	ppb	No	Discharge from industrial chemical factories.
Benzene	2016	Levels lower than detect level.	0 - 0	0	5	ppb	No	Discharge from factories, leaching from gas storage tanks and landfills.
Carbon Tetrachloride	2016	Levels lower than detect level.	0 - 0	0	5	ppb	No	Discharge from chemical plants and other industrial activities.
Chlorobenzene	2016	Levels lower than detect level.	0 - 0	100	100	ppb	No	Discharge from chemical and agricultural chemical factories.
Dichloromethane	2016	Levels lower than detect level.	0 - 0	0	5	ppb	No	Discharge from pharmaceutical and chemical factories.
Ethylbenzene	2016	Levels lower than detect level.	0 - 0	0	700	ppb	No	Discharge from petroleum refineries.
Styrene	2016	Levels lower than detect level.	0 - 0	100	100	ppb	No	Discharge from rubber and plastic factories, leaching from landfills.
Tetrachloroethylene	2016	Levels lower than detect level.	0 - 0	0	5	ppb	No	Discharge from factories and dry cleaners.
Toluene	2016	Levels lower than detect level.	0 - 0	1	1	ppm	No	Discharge from petroleum factories.
Trichloroethylene	2016	Levels lower than detect level.	0 - 0	0	5	ppb	No	Discharge from metal degreasing sites and other factories.
Vinyl Chloride	2016	Levels lower than detect level.	0 - 0	0	2	ppb	No	Leaching from PVC piping; discharge from plastics factories.
Xylenes	2016	Levels lower than detect level.	0 - 0	10	10	ppm	No	Discharge from petroleum factories, discharge from chemical factories.
Cis - 1, 2 - Dichloroethylene	2016	Levels lower than detect level.	0 - 0	70	70	ppb	No	Discharge from industrial chemical factories.
o - Dichlorobenzene	2016	Levels lower than detect level.	0 - 0	600	600	ppb	No	Discharge from industrial chemical factories.
p - Dichlorobenzene	2016	Levels lower than detect level.	0 - 0	75	75	ppb	No	Discharge from industrial chemical factories.
Trans - 1, 2 - Dichloroethylene	2016	Levels lower than detect level.	0 - 0	100	100	ppb	No	Discharge from industrial chemical factories.

Turbidity

	Limit (Treatment Technique)	Level Detected	Violation	Likely Source of Contamination
Highest Single Measurement	1 NTU	0.78 NTU	No	Soil runoff.
Lowest monthly percentage (%) meeting limit	0.3 NTU	96.20%	No	Soil runoff.

NOTE: Turbidity is a measurement of the cloudiness of the water caused by suspended particles. We monitor because it is a good indicator of water quality and the effectiveness of our filtration.

Maximum Residual Disinfectant Level

Chemical Used	Year	Average Level of Quarterly Data	Lowest Result of Single Sample	Highest Result of Single Sample	MRDL	MRDLG	Units	Source of Chemical
Chlorine Dioxide	2016	0	0	0	0.8	0.8	ppm	Disinfectant.
Chlorite	2016	0	0	0.115	1.0	N/A	ppm	Disinfectant.

Total Organic Carbon

	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Source Water	2016	4.23	3.14-4.23	ppm	Naturally present in the environment.
Drinking Water	2016	2.8	1.37-2.80	ppm	Naturally present in the environment.
Removal Ratio	2016	63.9%	25.7-63.9	% 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.

Cryptosporidium and Giardia

Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Cryptosporidium	2016	0	0 - 0	(Oo) Cysts/L	Human and animal fecal waste.
Giardia	2016	0	0 - 0	(Oo) Cysts/L	Human and animal fecal waste.

NOTE: Taken on treated water samples.

Unregulated Contaminants

Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Chloroform	2016	21	9.18-21	ppb	By-product of drinking water disinfection.
Bromoform	2016	1.67	0-1.67	ppb	By-product of drinking water disinfection.
Bromodichloromethane	2016	11.1	7.33-11.1	ppb	By-product of drinking water disinfection.
Dibromochloromethane	2016	8.47	2.91-8.47	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.

Secondary and Other Constituents Not Regulated

Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Calcium	2016	85.2	30.7-85.2	ppm	Abundant naturally occurring element.
Chloride	2016	70.3	15.2-70.3	ppm	Abundant naturally occurring element; used in water purification; by-product of oil field activity
Hardness as Ca/Mg	2016	238	159-238	ppm	Naturally occurring calcium and magnesium.
Iron	2016	0.02	0.00 - 0.02	ppm	Erosion of natural deposits; iron or steel water delivery equipment or facilities.
Magnesium	2016	6.65	5.85-6.65	ppm	Abundant naturally occurring element.
Manganese	2016	0.017	0.0005 - 0.017	ppm	Abundant naturally occurring element.
Nickel	2016	0.0041	0.0025 - 0.0041	ppm	Erosion of natural deposits.
pH	2016	9.00	7.1-9.0	units	Measure of corrosivity of water.
Sodium	2016	77.4	26.8-77.4	ppm	Erosion of natural deposits; by-product of oil field activity.
Sulfate	2016	144	69-144	ppm	Naturally occurring; common industrial by-product; by-product of oil field activity.
Total Alkalinity as CaCO3	2016	117	60-117	ppm	Naturally occurring soluble mineral salts.
Total Dissolved Solids	2016	556	194-556	ppm	Total dissolved mineral constituents in water.
Total Hardness as CaCO3	2016	268	80-268	ppm	Naturally occurring calcium.
Zinc	2016	0.013	0.000-0.013	ppm	Moderately abundant naturally occurring element used in the metal industry.

Water Loss

The key to early leak detection is being aware of your typical monthly water usage amount (number of gallons). During winter months, we typically use less water because warmer weather months can be accompanied by more outdoor irrigation (a big water user). Knowing your typical winter usage amount, and comparing it to the gallons of usage on your current bill, can help you determine if the spike you see may be due to outdoor water use, or a possible silent leak. A silent water leak may be found indoors or outdoors, and may be as simple as a leaky toilet valve/flapper or a broken irrigation system component. Checking for and repairing leaks is one way to help manage your water bill. Another way is by subscribing to receive free weekly outdoor watering recommendations based on your local weather data at www.WaterMyYard.org.