

2018 WATER QUALITY REPORT

Consumer Confidence Report for the period of January 1 to December 31, 2018



CITY OF HORSESHOE BAY
PWS ID NUMBER: 1500015

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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.

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 at (800) 426-4791.

For more information regarding this report contact:

Jeff Koska, Utilities Director

Office: 830-598-9981

Email: city@horseshoe-bay-tx.gov

Este informe contiene información importante sobre el origen y la calidad de su agua potable.
Para información en Español llame 830-598-8741.

The source of drinking water used by the City of Horseshoe Bay is
Surface Water from Lake Lyndon B. Johnson (LBJ).

Information about Source Water Assessments

A Source Water Susceptibility Assessment for your drinking water was completed by the Texas Commission on Environmental Quality (TCEQ). 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. Results indicate that some of your sources are susceptible to certain contaminants. The sampling requirements for your water system are based on this susceptibility and previous sample data. Any detections of these contaminants may be found in this Consumer Confidence Report. For more information on source water assessments and protection efforts at our system, contact Jeff Koska, Utilities Director.

- For more information about your sources of water, please refer to the Source Water Assessment Viewer available at the following URL:
<https://www.tceq.texas.gov/gis/swaview>
- Further details about sources and source water assessments are available in Drinking Water Watch at the following URL: <http://dww2.tceq.texas.gov/DWW/>

SPECIAL NOTICE

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 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; and,

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

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. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

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 the water department at 830-598-8741.

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; persons 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 providers. Additional guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Safe Drinking Water Hotline (800) 426-4791.

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. We are 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 the 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>.

Definitions (The following tables contain scientific terms and measures used in this report, some of which may require explanation.)

AL	Action Level	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.	
ALG	Action Level Goal	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.	
AVG	Average	Regulatory compliance with some MCLs are based on running annual average of monthly samples.	
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.	
NTU	Nephelometric Turbidity Units	A measure of turbidity.	
mg/L ppm	Milligrams per liter or parts per million – or one ounce in 7,350 gallons of water.	ug/L ppb	Micrograms per liter or parts per billion – or one ounce in 7,350,000 gallons of water.
MAX	Maximum	MIN	Minimum
NA	Not Applicable	YEAR	Collection Date; the year in which sample(s) were collected.

Fluoride in drinking water.

This is an alert about your drinking water and a cosmetic dental problem that might affect children under nine years of age. At low levels, fluoride can help prevent cavities, but children drinking water containing more than 2 milligrams per liter (mg/L) of fluoride may develop cosmetic discoloration of their permanent teeth (dental fluorosis). The drinking water provided by your community water system **City of Horseshoe Bay** has a fluoride concentration of **0.2 mg/L**.

Dental fluorosis, in its moderate or severe forms, may result in a brown staining and/or pitting of the permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums. Children under nine should be provided with alternative sources of drinking water or water that has been treated to remove the fluoride to avoid the possibility of staining and pitting of their permanent teeth. You may also want to contact your dentist about proper use by young children of fluoride-containing products. Older children and adults may safely drink the water.

Drinking water containing more than 4 mg/L of fluoride (the U.S. Environmental Protection Agency's drinking water standard) can increase your risk of developing bone disease. Your drinking water does not contain more than 4 mg/L of fluoride, but we're required to notify you when we discover that the fluoride levels in your drinking water exceed 2 mg/L because of this cosmetic dental problem.

For more information, please call **Joshua Hisey** of City of Horseshoe Bay at **830-598-9983**. Some home water treatment units are also available to remove fluoride from drinking water. To learn more about available home water treatment units, you may call NSF International at 1-877-8-NSF-HELP.

2018 WATER QUALITY TEST RESULTS

Regulated Contaminants

Coliform Bacteria

MCLG	Total Coliform MCL	Highest No. of Positive	Fecal Coliform or E.Coli MCL	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.

Lead and Cooper - Testing Required Every 3 Years

Year	Contaminant (Unit)	MCLG	Action Level (AL)	90 th Percentile	# Sites over AL	Violation	Likely Source of Contamination
2018	Copper (ppm)	1.3	1.3	0.994	3	No	Erosion of natural deposits; leaching from wood preservatives; corrosion of household plumbing systems.
2018	Lead (ppb)	0	15	12	3	No	Corrosion of household plumbing systems, erosion of natural deposits.

Secondary Constituents and Other Unregulated 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.

Year	Constituent (Unit)	AVG Level	MIN Level	MAX Level	Limit	Likely Source of Contamination
2018	Aluminum (mg/L)	0.3315	0.318	0.345	0.2	Abundant naturally occurring element.
2018	Chloride (mg/L)	39.3	26.1	54.5	300	A chemical compound of chlorine used in water purification.
2018	Manganese (mg/L)	0.0103	0.002	0.062	.05	Occurs naturally in the environment as solids in soils and small particles in water.
2018	ph (units)	7.89	6.68	8.91		Measures of corrosivity in water.
2018	Sodium	22	12.2	34.9	No MCL	Erosion of natural deposits.
2018	Total Alkalinity (mg/L)	134	68	200	No MCL	Naturally occurring soluble mineral salts.
2018	Total Dissolved Solids (mg/L)	251	218	284	1000	Total dissolved mineral constituents in water.
2018	Total Hardness as Calcium Carbonate (mg/L) or grains/gal	167 mg/L 10.058 gr/gal	166	184	No MCL	The presence of calcium and magnesium in water is a factor contributing to the formation of scale and insoluble soap curds which are a means of clearly identifying hard water.
2018	Toluene	0.5	0 – 0.5	0.5	1	Used in chemical manufacturing processes.

Inorganic Contaminants

Year	Contaminant (Unit)	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Violation	Likely Source of Contamination
2018	Arsenic (ppb)	2	0 – 2.2	0	10	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
2018	Barium (ppm)	0.0621	0.0486 -0.0621	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
2018	Cyanide (ppb)	10	0 - 10	200	200	No	Discharge from plastics and fertilizer factories; Discharge from steel/metal factories.
2018	Fluoride (ppm)	0.22	0.22 - 0.22	4	4.0	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
2018	Nitrate [measured as Nitrogen (ppm)]	0.05	0.03 – 0.05	10	10	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.

Radioactive Contaminants							
Year	Radioactive Contaminants	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Violation	Likely Source of Contamination
4/14/2016	Combined Radium 226/228 (pCi/L)	1.5	1.5 - 1.5	0	5	No	Erosion of natural deposits.

Disinfectants and Disinfection By-Products

Year	Contaminant (Unit)	Highest Level Detected	Range of Levels	Detection Limit	MCLG	MCL	Violation	Source of Contaminant
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**The value in the Highest Level or Average Detected column is the highest average of all HAA5 sample results collected at a location over a year.

2018	Haloacetic Acids Total (HAA5) ppb	49	12 – 136	NA	No goal	60	No	By-product of drinking water disinfection.
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**The value in the Highest Level or Detected Column is the highest average of all TTHM sample results collected at a location over a year.

2018	Total Trihalomethanes (TTHM) ppb	82	51.3 – 153	NA	No goal	80	Yes	By-product of drinking water disinfection.
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Disinfectant Residual

Year	Constituent (Unit)	AVG Level	MIN	MAX	MRDL	MRDLG	Violation	Likely Source of Contamination
2018	Free Chlorine / Chloramines (ppm)	1.99	0.07	3.7	4	4	No	Water additive used to control microbes.

Synthetic Organic Contaminants

Year	Contaminant (Unit)	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Violation	Likely Source of Contamination
2018	Di (2-ethylhexyl) phthalate (ppb)	1	0 - 1	200	200	No	Runoff from herbicide used on rights of way.
2018	Dalapon	1	0 – 0.89	0	6	No	Discharge from rubber and chemical factories.

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 system and disinfectants.

Year	Turbidity	Level Detected	Limit Treatment Technique	Violation	Likely Source of Contamination
2018	Highest Single Measurement	0.74	1 NTU	No	Soil runoff
2018	Lowest Monthly % Meeting Limit	100%	0.30 NTU	No	Soil runoff

Organic Compounds

Year	Contaminant (Unit)	AVG	MIN	MAX	MCL	Violation	Source of Contamination
2018	Carbon mg/L	5.82	4.18	7.91	No MCL	No	Herbicide runoff.

Total Organic Carbon

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 violations section.

REPORTING VIOLATIONS FOR 2018

Lead and Copper Rule

The Lead and Copper Rule protects public health by minimizing lead and copper levels in drinking water, primarily by reducing water corrosivity. Lead and copper enter drinking water mainly from corrosion of lead and copper containing plumbing materials.

Violation Type	Violation Begin	Violation End
Follow-up or Routine TAP M/R (LCR)	01/01/2018	07/03/2018

We failed to test our drinking water for the contaminant and period indicated. Because of this failure, we cannot be sure of the quality of our drinking water during the period indicated. We failed to take the correct number of samples for this period.

Total Trihalomethanes (TTHM)

Some people who drink water containing trihalomethanes in excess of the MCL over many years experience problems with their liver, kidneys, or central nervous systems, and may an increased risk of getting cancer.

Violation Type	Violation Begin	Violation End
MCL, LRAA	10/01/2018	12/31/2018

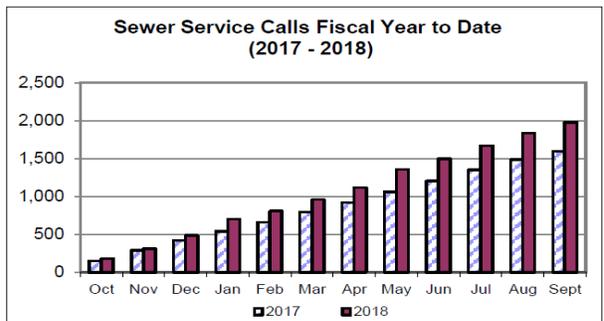
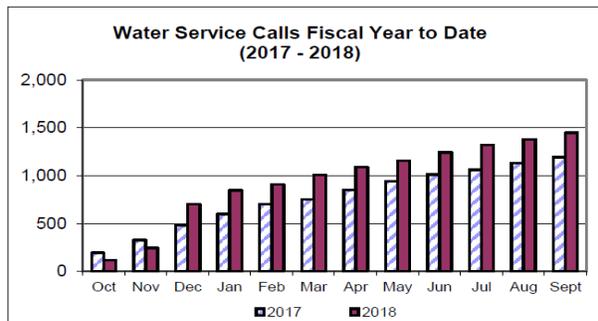
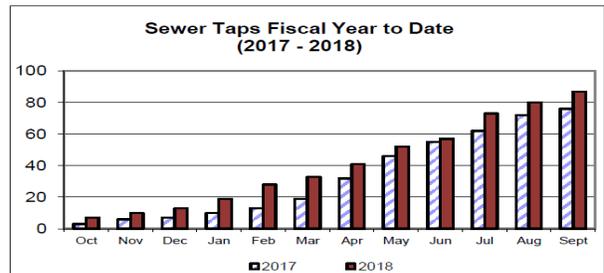
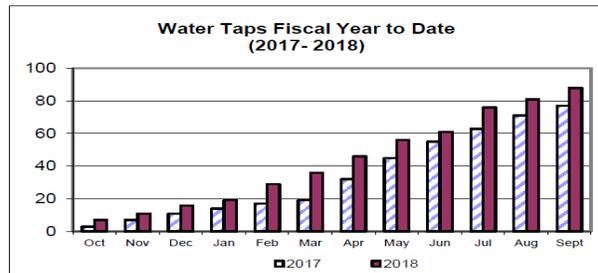
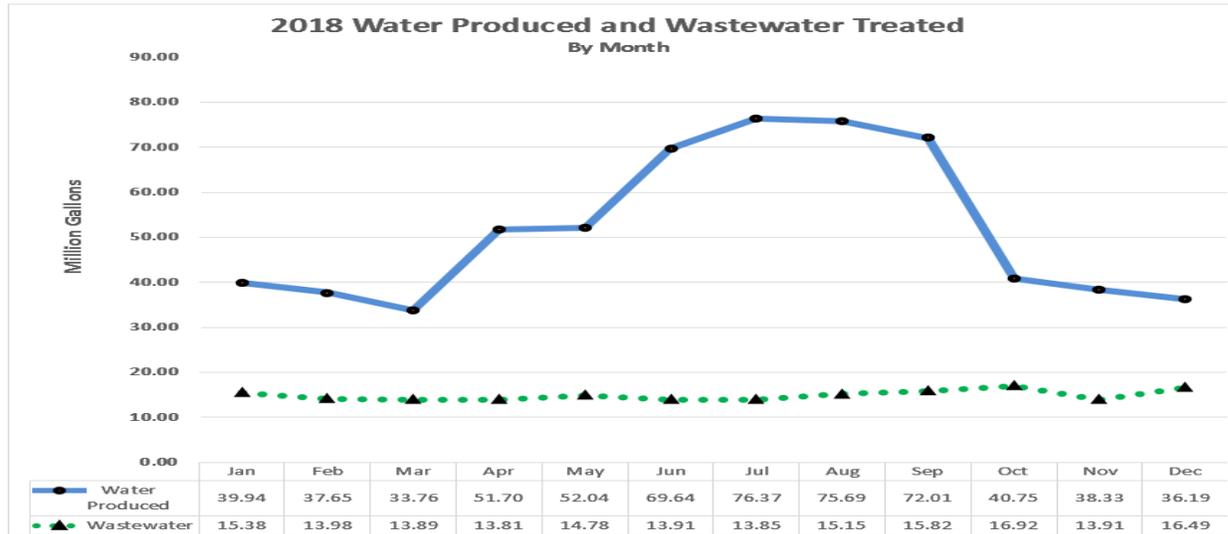
Water samples showed that the amount of this contaminant in our drinking water was above its standard for the period indicated. The flood of October 2018 increased the level of organics in our source water, Lake LBJ, causing elevated levels of TTHM's from October 2018 to February 2019.

City of Horseshoe Bay Utilities Statistical Data for 2018

2016 WATER SYSTEM USAGE	
Maximum Month:	August - 85 MG
Minimum Month:	Feb - 26 MG
Water Produced in 2016:	561,800,000 million gallons (MG) or 1724.10 acre/ft
Average Day:	1.540 MGD
Water Loss:	5.5%
Water Going Toward Outside Use:	63.1%
Water Entering Sewer:	36.5%

2017 WATER SYSTEM USAGE	
Maximum Month:	July - 79 MG
Minimum Month:	Feb - 34 MG
Water Produced in 2017:	603,813,000 million gallons (MG) or 1853.03 acre/ft
Average Day:	1.650 MGD
Water Loss:	4%
Water Going Toward Outside Use:	61%
Water Entering Sewer:	35%

2018 WATER SYSTEM USAGE	
Maximum Month:	July - 82 MG
Minimum Month:	Feb - 32 MG
Water Produced in 2018:	619,335,000 million gallons (MG) or 1900.67 acre/ft
Average Day:	1.697 MGD
Water Loss:	5.5%
Water Going Toward Outside Use:	66%
Water Entering Sewer:	35%



New Rules Requiring Irrigation System Backflow Prevention Device Testing

Effective July 2019 all sprinkler system backflow preventers in Horseshoe Bay must undergo a test at least once every five years. This rule applies to both new and old backflow preventers. In a few special cases more frequent tests may be required when the City deems it necessary.

The City will mail notices to residents over the next 18 months to have them get their first test done. Customers will have three months to comply once they receive a letter. Customers with units tested within the last five years should not receive a notice until their fifth test anniversary.

Backflow preventers are critical to public health because they protect drinking water from becoming contaminated by unclean water from places such as irrigation piping. However, after a period of years, the devices often quit working as parts wear out or become fouled by debris.

The City and property owners need to know backflow preventers are functioning to protect our residents. The only way to assure function is through regular testing.

To find a tester, go to the website Vepollc.com, click "Backflow Management," then "Registered BPAT List," and click "City of Horseshoe Bay" on the dropdown.

Water Conservation Stage and Customer Conservation Resources

The City remains in Water Conservation Stage II of the Drought Contingency Plan.



CITY OF HORSESHOE BAY

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Water Conservation Stages

STAGE 2 - RESTRICTIONS AND PENALTIES

STAGE 2
Effective June 16, 2015

RESTRICTIONS

In conjunction with the prohibition of watering between the hours of 10:00 a.m. and 7:00 p.m., outdoor watering shall be restricted to twice per week, with watering allowed under the following Lawn/Landscape Schedule:

CUSTOMER	OUTDOOR WATER USE DAYS
Commercial, Multifamily	7:00 pm Tuesday to 10:00 am Wednesday and/or 7:00 pm Friday to 10:00 am Saturday
Residential - Odd Numbered Address	7:00 pm Wednesday to 10:00 am Thursday and/or 7:00 pm Saturday to 10:00 am Sunday
Residential - Even Numbered Address	7:00 pm Thursday to 10:00 am Friday and/or 7:00 pm Sunday to 10:00 am Monday

NO WATERING

NO WATERING ON MONDAY
No watering on Customer's next watering day if it rains during that week.

We also do education for residents on a continuing basis. This effort includes offering free irrigation assessments to help inform residents about how to run their sprinkler systems more efficiently to save water and money. We perform about 80 assessments each year. Through these assessments, we often find ways to cut water consumption by at least 25 percent. Customer knowledge from these assessments can help guarantee savings in the future, as well.

The City promotes low-water use gardening through the Steve Hawley Drought Tolerant Demonstration Gardens behind City Hall, which are open to the public. Other conservation efforts are the publication of articles about water conservation in local publications and an annual free irrigation class for residents each spring.

For more information about water conservation and backflow prevention, call the City's Water Conservation Inspector at 830-598-9973.

TTHM Violation

The Texas Commission on Environmental Quality (TCEQ) has notified the CITY OF HORSESHOE BAY TX1500015, the drinking water being supplied to customers had exceeded the Maximum Contaminant Level (MCL) for total Trihalomethanes. The U.S. Environment Protection Agency (U.S. EPA) has established the MCL for total Trihalomethanes to be 0.080 milligrams per liter (mg/L) based on the locational running annual average (LRAA) and has determined that it is a health concern at levels above the MCL. Analysis of drinking water in your community for total Trihalomethanes indicates a compliance value in quarter two of 2019 of 0.085 mg/L for DBP2-01.

Trihalomethanes are a group of volatile organic compounds that are formed when chlorine, added to the water during the treatment process for disinfection, reacts with naturally occurring organic matter in the water. Some people who drink water containing Trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidney, or central nervous systems, and may have an increased risk of getting cancer.

The flood event in October 2018 brought with it large amounts of decaying organic material in the lake water that interacted with the Chlorine disinfection used at the water plants consequently producing higher concentrations of Total Trihalomethanes in the 4th quarter of 2018 (0.082mg/L) and 1st quarter of 2019 (0.095 mg/L). These constituent samples increased the locational 4 quarter running annual averages (LRAA) to exceeded compliance level of TTHM of 0.080mg/L.

Since the City was notified of the violation, mitigating of this issue has been our highest priority. City Staff have lowered Chlorine levels and purchased in-house TTHM testing equipment and began operational modifications in an effort to lower the TTHM concentration to the lowest feasible levels while still ensuring biological disinfection is maintained. Continued monitoring and treatment optimization shows that the City's water supply is safe based on our latest samples results 0.018 mg/L more than four times lower than the 0.080 mg/L. You do not need to use an alternative water supply. However, if you have health concerns, you may want to talk to a doctor to get more information about how this may affect you.

Lead & Copper Notice of Violation

City Staff failed to collect all compliance samples for the Lead & Copper monitoring program for the period of January 1 to July 31, 2018. 20 samples were collected within the dates, additionally there 20 samples collected in August 2018 to meet compliance. TCEQ has since lowered the required 40 samples to 20 samples for the City, due to low test results.

If you have questions regarding this matter, you may contact Josh Hisey at 830-598-9983

