

2016 WATER QUALITY REPORT

Consumer Confidence Report for the period of January 1 to December 31, 2016



CITY OF HORSESHOE BAY

PWS ID NUMBER: 1500015

PHONE: 830-598-8741

EMAIL: city@horseshoe-bay-tx.gov

WEBSITE: www.horseshoe-bay-tx.gov



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.)

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.	
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.	
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.

Level 2 Assessment
 A Level 2 Assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

WATER QUALITY TEST RESULTS

2016 REGULATED CONTAMINANTS DETECTED

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	2	1	1	No	Naturally present in the environment

Lead and Cooper - Testing Required Every 3 Years

Year	Contaminant (Unit)	90 th Percentile	Action Level (AL)	# Sites Over AL	MCLG	Violation	Likely Source of Contamination
2015	Copper (ppm)	0.327	1.3	0	1.3	No	Erosion of natural deposits; leaching from wood preservatives; corrosion of household plumbing systems.
2015	Lead (ppb)	3.02	15	0	0	No	Corrosion of household plumbing systems, erosion of natural deposits.

Maximum Residual Disinfectant Level

Year	Disinfectant (Unit)	AVG Level	MIN Level	MAX Level	MRDLG	MRDL	Likely Source of Chemical
2016	Free Chlorine / Chloramines (ppm)	3.78	1.6	5.0	4.0	4.0	Disinfectant used to control microbes

Disinfectants and Disinfection By-Products

Year	Contaminant (Unit)	Highest Level Detected	Range of Levels	Detection Limit	MCLG	MCL	Violation	Source of Contaminant
2016	Bromoform (ug/L)	1.9	< DL 1.9 ug/L	1 ug/L	0	80ug/l	No	Disinfection Byproduct
2016	Haloacetic Acids Total (ug/L)	37.2	25 – 37.2	No Goal	<60 ug/L	<60 ug/L	No	Disinfection Byproduct
2016	Trichloroacetic Acid (ug/l)	11.6	6.6 - 11.6	5 ug/L	<60 ug/L	60 ug/l	No	Disinfection Byproduct
2016	TTHM (ug/L)	67	37.6 – 75.3	1 ug/L	<80 ug/L	80 ug/L	No	Disinfection Byproduct

Inorganic Contaminants

Year	Contaminant (Unit)	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Violation	Likely Source of Contamination
2016	Barium (ppm)	0.0593	0.0545-0.0593	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
2016	Cyanide (ppm)	0.05	0.03-0.05	0.2	0.2	No	Discharge from plastics and fertilizer factories; Discharge from steel/metal factories.

Inorganic Contaminants

Year	Contaminant (Unit)	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Violation	Likely Source of Contamination
2016	Fluoride (ppm)	0.64	0.24-0.64	4	4.0	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
2016	Nitrate - (ppm)	0.31	0.08-0.31	10	10	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

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.

2016 Unregulated Constituents Detected

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.

Secondary Constituents and Other Unregulated Constituents						
Year	Constituent (Unit)	AVG Level	MIN Level	MAX Level	Limit	Likely Source of Contamination
2016	Aluminum (mg/L)	0.042	< Detection Limit (0.02)	0.161	0.2	Abundant naturally occurring element.
2016	Chloride (mg/L)	29	27	31	300	A chemical compound of chlorine used in water purification.
2016	Magnesium (mg/L)	17.45	17.2	17.7	No MCL	The eighth most abundant metal in the Earth's crust; it occurs naturally in deposits of magnesite, dolomite, and other minerals.
2016	Manganese (mg/L)	0.004	< Detection Limit	0.0062	0.05	Occurs naturally in the environment as solids in soils and small particles in water.
2016	pH (units)	7.85	7	8.2	6.5-8.5	Measure of corrosivity of water.
2016	Sulfate (mg/L)	26	19	33	300	Naturally occurring; low to moderate concentrations of both chloride and sulfate ions add palatability to water.
2016	Total Dissolved Solids (mg/L)	233	222	244	500	Total dissolved mineral constituents in water.
2016	Total Hardness as Calcium Carbonate (mg/L) or grains/gal	172	170	174	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.

Radioactive Contaminants							
Year	Radioactive Contaminants	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Violation	Likely Source of Contamination
2016	Combined Radium 226/228 (PCI/L)	1.5	1.5-1.5	0	5	No	Decay of natural and man-made deposits.

Synthetic Organic Contaminants								
Year	Contaminant (Unit)	Highest Level Detected	Range of Levels	Detection Limit	MCLG	MCL	Violation	Source of Contamination
2016	Picloram (ug/L)	0.1	0-0.1	< Det. Lim – 0.01	500	500	No	Herbicide runoff.

Organic Compounds							
Year	Contaminant (Unit)	AVG	MIN	MAX	MCL	Violation	Source of Contamination
2016	Carbon	5.3	1.8	9.88	No MCL	No	Herbicide runoff.

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.

Year	Turbidity	Limit Treatment Technique	Level Detected	Violation	Likely Source of Contamination
2016	Highest Single Measurement	1 NTU	0.29	No	Soil runoff
2016	Lowest Monthly % Meeting Limit	0.30 NTU	100%	No	Soil runoff

REPORTING VIOLATIONS FOR 2016	2016 WATER SYSTEM USAGE DATA	
<p>Revised Total Coliform Rule (RTCR) Violation – Began 09/01/2016 – Ended 9/30/2016 The City received a positive coliform sample indicating the need to look for potential problems in water treatment or distribution. Additional sampling was conducted indicating an <i>E. coli</i>-positive for one of the repeat sample results. As a result of this positive sample the City was required to complete a Level 2 Assessment to identify potential problems and to take corrective actions found during the Level 2 assessment. No water system problems were identified, however the City implemented corrective actions that included revising biological sampling standard operating procedures and City Staff completing additional education related to sampling and water distribution monitoring.</p> <p>Lead & Copper Reporting Violation – Began 12/30/2015 – Ended 2/08/2016 We received a Lead Consumer Notice violation for not delivering test results to the households that participated in the Lead and Copper testing within 30 days after receiving the test reports from the laboratory. The violation was resolved by immediate delivery of the results upon notification and we returned to compliance. This violation <u>was not</u> as a result of exceeding any regulatory maximum contaminant level.</p>	Maximum Month:	August - 84.921 MG
	Minimum Month:	February - 26.264 MG
	Water Produced in 2016:	561,800,000 million gallons (MG) or 1724.098 acre/ft
	Average Day:	1.540 MGD
	Water Loss:	0.39%
	Water Going Toward Outside Use:	63.1%
	Water Entering Sewer:	36.5%

WATER CONSERVATION AND DROUGHT INFORMATION

To check current restriction status or for additional water conservation information please refer to the City's website at: <http://www.horseshoe-bay-tx.gov>