

Annual Drinking Water Quality Report

TX1750019

RICE WSC

Annual Water Quality Report for the period of January 1 to December 31, 2016

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.

For more information regarding this report contact:

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Este reporte incluye información importante sobre el agua para tomar. Para asistencia en español, favor de llamar al teléfono 903 326-5551

RICE WSC is Purchased Surface Water

Sources of Drinking Water

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.

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.

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.

- 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, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. 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 system's business office.

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 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>.

Our Water Supply ID# 1750019 in the water loss audit submitted to the Texas Water Development Board For the time for Jan. 2016 to Dec 2016 loss in gallons of 46,647,800 or 1.7%

Information about Source Water Assessments

A Source Water Susceptibility Assessment for your drinking water source(s) is currently being updated by the Texas Commission on Environmental Quality. 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.

For more information about your sources of water, please refer to the Source Water Assessment Viewer available at the following URL:
<http://gis3.tceq.state.tx.us/swav/Controller/index.jsp?wtrsrc=>

Further details about sources and source-water assessments are available in Drinking Water Watch at the following URL: <http://dww.tceq.texas.gov/DWW>

Source Water Name	Type of Water	Report Status	Location
FROM DISTRIBUTION	SW	_____	_____
SW FROM CORSICANA	SW	_____	_____
SW FROM ENNIS	SW	_____	_____

2016 Regulated Contaminants Detected

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	N	Naturally present in the environment.

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	0.176	0	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	2016	0	15	2.43	1	ppb	N	Corrosion of household plumbing systems; Erosion of natural deposits.

Water Quality Test Results

Definitions:

The following tables contain scientific terms and measures, some of which may require explanation.

Avg:

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

Maximum Contaminant Level or MCL:

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.

Level 1 Assessment:

A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Maximum Contaminant Level Goal or MCLG:

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.

Water Quality Test Results

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.

Maximum residual disinfectant level or MRDL: 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.

Maximum residual disinfectant level goal or 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 contaminants.

MFL million fibers per liter (a measure of asbestos)

na: not applicable.

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

NTU nephelometric turbidity units (a measure of turbidity)

pCi/L picocuries per liter (a measure of radioactivity)

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

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

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

ppt parts per trillion, or nanograms per liter (ng/L)

ppq parts per quadrillion, or picograms per liter (pg/L)

Regulated Contaminants

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Halooacetic Acids (HAA5)	2016	26	15.7 - 35.2	No goal for the total	60	ppb	N	By-product of drinking water disinfection.
Total Trihalomethanes (TTHM)	2016	50	38.3 - 64.8	No goal for the total	80	ppb	N	By-product of drinking water disinfection.
Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Nitrate [measured as Nitrogen]	2016	4	0.054 - 4.21	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

Detected Regulated Contaminates for 2016

EP2 Lake Halbert

VOC's	Detected Quantity	MC/L	Date Collected	Analytical Method
Acetone	10.7 ug/l	N/A	2/2/2016	E524.2 GC/MS
Chloroform	46.1 ug/l	N/A	2/2/2016	E524.2 GC/MS
Bromodichloromethane	2.43 ug/l	N/A	2/2/2016	E524.2 GC/MS
Dibromochloromethane	2.43 ug/l	N/A	2/2/2016	E524.2 GC/MS

Inorganics

Chloride	6.73 mg/l	300.0 mg/l	2/2/2016	E300.0 Anions
Fluoride	0.733 mg/l	4.0 mg/l	2/2/2016	E300.0 Anions
Nitrate (as N)	0.0810 mg/l	10.0 mg/l	2/2/2016	E300.0 Anions
Sulfate	39.0 mg/l	300.0 mg/l	2/2/2016	E300.0 Anions

Total Dissolved Solids	135 mg/l	1000.0 mg/l	2/2/2016	SM2540C
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Inorganics

Metals Trace Elements

Sodium Total	13.9 mg/l	20,000.0 mg/l	2/2/2016	E200.7 Metals, Trace
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E200.8 ICP-MS

Aluminum Total	0.059 mg/l	0.2 mg/l	2/2/2016	E200.8 IC-MS
Barium Total	0.031 mg/l	2.0 mg/l	2/2/2016	E200.8 IC-MS
Chromium Total	0.00042 mg/l	0.1 mg/l	2/2/2016	E200.8 IC-MS
Copper Total	.0011 mg/l	1.3 mg/l	2/2/2016	E200.8 IC-MS
Manganese Total	.00017 mg/l	0.05 mg/l	2/2/2016	E200.8 IC-MS
Nickel Total	.00079 mg/l	.1 mg/l	2/2/2016	E200.8 IC-MS
Cyanide Total	0.0531 mg/l	0.2 mg/l	2/2/2016	E355.4 CN

DEFINITIONS

ug/l parts per billion or micrograms per liter

mg/l parts per million or milligrams per liter

Detected Regulated Contaminates for 2016

EP 1 Navarro Mills

SOC Pesticide	Detected Quantity	MCL	Date Collected	Analytical Method
Bis(2-Ethylhexyl)phthalate	0.8 ug/l	6.0 ug/l	2/2/2016	E525.2 GC/MS
VOC's				
Acetone	7.23 ug/l	N/A	2/2/2016	E524.2 GC/MS
Chloroform	43.7 ug/l	N/A	2/2/2016	E524.2 GC/MS
Bromodichloromethane	15.3 ug/l	N/A	2/2/2016	E524.2 GC/MS
Dibromochloromethane	3.43 ug/l	N/A	2/2/2016	E524.2 GC/MS
Inorganics				
Chloride	6.15 mg/l	300.0 mg/l	2/2/2016	E300.0 Anions
Fluoride	0.796 mg/l	4.0 mg/l	2/2/2016	E300.0 Anions
Nitrate (as N)	0.0810 mg/l	10.0 mg/l	2/2/2016	E300.0 Anions
Sulfate	31.5 mg/l	300.0 mg/l	2/2/2016	E300.0 Anions
Total Dissolved Solids	174 mg/l	1000.0 mg/l	2/2/2016	SM2540C
Inorganics Metals Trace Elements				
Sodium Total	11.5 mg/l	20,000.0 mg/l	2/2/2016	E200.7 Metals, Trace
E200.8 ICP-MS				
Aluminum Total	0.028 mg/l	0.2 mg/l	2/2/2016	E200.8 IC-MS
Antimony Total	<0.00020 mg/l	0.006 mg/l	2/2/2016	E200.8 IC-MS
Arsenic Total	0.00070 mg/l	0.01 mg/l	2/2/2016	E200.8 IC-MS
Barium Total	0.037 mg/l	2.0 mg/l	2/2/2016	E200.8 IC-MS
Chromium Total	0.00083 mg/l	0.1 mg/l	2/2/2016	E200.8 IC-MS
Copper Total	.0023 mg/l	1.3 mg/l AL	2/2/2016	E200.8 IC-MS
Manganese Total	.00012 mg/l	0.05 mg/l	2/2/2016	E200.8 IC-MS
Nickel Total	.0011 mg/l	.1 mg/l	2/2/2016	E200.8 IC-MS
Selenium Total	<.00100 mg/l	.05 mg/l	2/2/2016	E200.8 IC-MS
Heavy Metals				
Mercury Total	.000189 mg/l	.002 mg/l	2/2/2016	E245.1 Mercury
Cyanide Total	0.573 mg/l	0.2 mg/l	2/2/2016	E355.4 CN

DEFINITIONS

ug/l parts per billion or micrograms per liter

mg/l parts per million or milligrams per liter

TTHM's 2016

Date of Samples	2/2/2016	4/26/2016	7/13/2016	10/28/2016	
Address of Sample	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Average of Quarters
4501 E HWY 31	35.0	42.9	71.2	52.1	50.3
2103 W 15th Ave	44.2	51.3	65.6	47.8	52.2
3500 Northpark	42.5	50.9	45.6	46.3	46.3
700 E 16th Ave	35.4	45.5	62.3	45.5	47.2
Average for each quarter	39.3	47.7	61.2	47.9	49.0

Haa5's 2016

Date of Samples	2/2/2016	4/26/2016	7/13/2016	10/28/2016	
Address of Sample	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Average of Quarters
4501 E HWY 31	38.9	24.6	37.3	23.5	31.1
2103 W 15th Ave	33.4	24.6	31.3	21.9	27.8
3500 Northpark	32.6	26.1	31.2	21.0	27.7
700 E 16th Ave	16.1	11.0	22.2	16.6	16.5
Average for each quarter	30.3	21.6	30.5	20.8	25.8

Regulated Substances

These substances are regulated or are required to be monitored and were detected in Ennis tap water. None of the detected substances exceeded the regulated limits.

Year	Substance	Units	Average	Minimum	Maximum	MCL	MCLG	Possible Source
2016	Fluoride	ppm	0.455	0.455	0.455	4	4	Erosion of natural deposits, water additive which promotes strong teeth, discharge from fertilizer and aluminum factories
2016	Antimony	ppm	0.00023	0.00023	0.00023	0.006	0.006	Discharge from petroleum refineries, fire retardants, ceramics, solder
2016	Arsenic	ppm	0.00075	0.00075	0.00075	0.010	0	Erosion of natural deposits, runoff from orchards, runoff from glass and electronic production
2016	Barium	ppm	0.063	0.063	0.063	2	2	Erosion of natural deposits, discharge from drilling and metal refineries
2016	Nitrate	ppm	0.486	0.486	0.486	10	10	Runoff from fertilizer, septic tanks, sewage, natural deposits
2016	Cyanide	ppm	0.118	0.118	0.118	0.2	0.2	discharges from metal-finishing industries, iron and steel mills, and organic chemical industries
2016	Chromium	ppm	0.0014	0.0014	0.0014	0.1	0.1	Naturally present in the environment
2011	Beta/Photon emitters*2	pCi/L	4.5	4.5	4.5	50	0	Decay of natural and man-made deposits
2011	Combined Radium 226&228	pCi/L	1.0	1.0	1.0	5	0	Decay of natural and man-made deposits
2016	Chloramines*3	ppm	3.5	2.2	4.1	MRDL=4	MRDLG=4	Disinfectant used to control microbes
2016	Total Haloacetic Acids*4	ppb	20.2	14.3	46.1	60	NA	Byproduct of drinking water disinfection
2016	Total Trihalomethanes*4	ppb	42.2	33.7	52.8	80	NA	Byproduct of drinking water disinfection
2016	Total Organic Carbon (TOC)*5	Measured in Source Water and Drinking Water as listed below.						
2016	Source Water	ppm	4.25	3.72	4.57			Naturally present in the environment
2016	Drinking Water	ppm	2.64	2.32	3.01			Naturally present in the environment
2016	Removal Ratio	%	1.52	1.00	2.38	%Removal*		NA
Year	Substance	Units	Highest Single Measurement	Lowest Monthly % of Samples Meeting Limit		Turbidity Limits		Possible Source
2016	Turbidity*6	NTU	0.08	100		0.3		Soil runoff
Year	Substance*7	Units	Action Level	Number of Sites > Action Level		90th Percentile		Possible Source
2016	Lead	ppm	0.015	0		NA		Corrosion of household plumbing systems; erosion of natural deposits
2016	Copper	ppm	1.3	0		NA		Corrosion of household plumbing systems, corrosion of natural deposits, leaching from wood preservatives.

Coliform Bacteria

Year	Highest No. of Positive	Total No. of Positive E. Coli or Fecal Coliform Samples	Fecal Coliform or E. Coli MCL	Total Coliform MCL	MCLG	Violation	Possible Source
2016	0	0	0	0	0	No	Naturally present in the environment

*1 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. *2 "The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles." *3 Systems must complete and submit disinfection data on the Surface Water Monthly Operations Report (SWMOR). On the CCR report, the system must provide disinfection type, minimum, maximum, and average level. **4 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. *5 Total organic carbon (TOC) no health effects. The disinfectant can combine with TOC to form disinfection byproducts. Disinfection is necessary to ensure that water does not have unacceptable levels of pathogens. Byproducts 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. *6 Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. *7 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. 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 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 (800) 426-4791 or at <http://www.epa.gov/safewater/lead>.

Unregulated and Substances of Interest

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. Any unregulated contaminants detected are reported in the following table. For additional information and data visit <http://www.epa.gov/safewater/ucmr/ucmr2/index.html>, or call the Safe Drinking Water Hotline at (800)426-4791.

Year	Substance	Units	Average	Minimum	Maximum	MCL	MCLG	Possible Source
2016	Chloroform	ppb	18.86	14.8	26.4	Not Regulated	Not Regulated	By-product of drinking water disinfection; not regulated individually; included in Total Trihalomethanes
2016	Bromoform	ppb	1.29	1.0	2.08	100	100	
2016	Bromochloromethane	ppb	14.14	12.1	18.0	Not Regulated	Not Regulated	
2016	Dibromochloromethane	ppb	9.13	5.8	13.9	Not Regulated	Not Regulated	
2016	Manganese	ppm	0.0056	0.0056	0.0056	0.05	0.05	Naturally present in the environment
2016	Acetone	ppm	0.0153	0.0153	0.0153	Not Regulated	Not Regulated	plants, animals, volcanoes, and forest fires
2016	Chloride	ppm	16.8	16.8	16.8	300	300	Abundant naturally occurring element; used in water purification; by-product of oil field activity
2016	Hardness as Ca/Mg	ppm	135	135	135	NA	NA	Naturally occurring calcium and magnesium
2016	Ph	ppm	7.5	7.2	7.7	>7.0	>7.0	Measure of corrosiveness of water
2016	Sodium	ppm	17.3	17.3	17.3	NA	NA	Erosion of natural deposits, by-product of oil field activity
2016	Sulfate	ppm	33.0	33.0	33.0	300	300	Naturally occurring, common industrial by-product; by-product of oil field activity
2016	Total Alkalinity as CaCO3	ppm	131	131	131	NA	NA	Naturally occurring soluble mineral salts
2016	Total Dissolved Solids	ppm	233	233	233	1000	1000	Total dissolved mineral constituents in water

Source Water Monitoring

The Long Term 2 Enhanced Surface Water Treatment Rule (LT2 Rule) requires public water systems that use surface water to monitor their source water (influent water prior to treatment) for Cryptosporidium, Giardia, E. coli, and turbidity for 24 month period beginning in October of 2016. Definitions: ND= Analyte not detected in sample. PQL= Practical Quantitation Limit- the method reporting limit (MRL) adjusted for any dilutions or other changes to the sample to deal with interferences/ matrix effects

Year	Substance	Units	Average	Minimum	Maximum	MCL	MCLG	Possible Source
2016	Turbidity	NTU	16.9	13.1	19.1	NA	NA	Soil runoff
2016	Cryptosporidium	oocysts/L	ND	ND	ND	NA	NA	Septic tanks and animal waste
2016	Giardia	cysts/L	ND	ND	ND	NA	NA	Septic tanks and animal waste
2016	E Coli	MPN/100mL	1 PQL	1 PQL	1 PQL	NA	NA	Septic tanks and animal waste