

2016 Annual Drinking Water Quality Report

June 12, 2017

To: All Castle Hills Water Customers
 From: Dustin Blank, Public Works Manager
 Denton County FWSD No. 1-A

Please find the attached 2016 Annual Drinking Water Quality Report (Consumer Confidence Report “CCR”) for water customers within the Castle Hills Master Planned Community. This report is produced in order to provide information to you about the Denton County FWSD No. 1-A water system, including the sources of water being distributed, the levels of detected contaminants, and compliance with the Texas Commission of Environmental Quality (“TCEQ”) drinking water rules and regulations. As shown in this report, the water in Castle Hills **meets or exceeds** all State and Federal requirements for water quality, and is safe to drink.

The source of drinking water used by Denton County FWSD No. 1-A is purchased, surface treated waters from the City of Lewisville (COL) and from the Upper Trinity Regional Water District (UTRWD). All water customers west of FM 2281/Old Denton Road or north of Parker Road/FM 544 receive surface treated water from the COL. All water customers south of Parker Road/FM 544, north of Hebron Parkway, east of FM 2281/Old Denton Road and west of Josey Lane receive surface treated water from the UTRWD.

If you have any questions or concerns with this 2016 Annual Drinking Water Quality Report or about the Denton County FWSD No. 1-A water distribution system, please feel free to call me directly at (972) 899-9745.

Dustin Blank
 Dustin Blank
 Public Works Manager

Consumer Confidence Report (CCR)

DENTON COUNTY F.W.S.D. #1-A CASTLE HILLS

PWS ID NUMBER: TX0610264

PWS NAME: DENTON COUNTY FWSD #1-A CASTLE HILLS

PHONE NUMBER: (972) 899-9745

Annual Water Quality Report is 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 your water system to provide safe drinking water. The source of drinking water used by DENTON COUNTY FWSD #1A CASTLE HILLS is Purchased Surface Water from both the City of Lewisville (PWS #TX0610004) and from the Upper Trinity Regional Water District (PWS #TX0610213). For more information regarding this report contact:

Name: Dustin Blank/Public Works Manager
 Phone: (972) 899-9745

Este reporte incluye informacion importante sobre el agua para tomar. Para asistencia en espanol, favor de llamar al telefono: (972) 899-9745.

Source 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 pickup substances resulting from the presence of animals or from human activity.

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, order, 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.

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.

Denton County FWSD #1-A 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>.

Information about Source Water Assessments

A Source Water 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>

Total Organic Carbon	Collection Date	Highest Level Detected	Range of Levels Detected	Treated Water Alkalinity		Units	Violation	Likely Source of Contaminations
Total Organic Carbon - COL/ Dallas	2016	5.43	2.86 - 5.43	< 60 (TT)	< 60 (TT)	ppm as (CaCo3)	N	Naturally present in the environment.
Radioactive Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contaminations
Gross Beta Emitters - UTRWD	06/20/2011	4.4	N/A	5	0	pCi/L (1)	N	Decay of natural and man-made deposits.
Gross beta particle activity - COL/Dallas	2011	7.2	4 - 7.2	0	50	pCi/L (1)	N	Decay of natural and man-made deposits.
Combined Radium - UTRWD	06/20/2011	1	N/A	5	0	pCi/L (1)	N	Erosion of natural deposits.
Combined Radium 226/228 - COL/Dallas	2011	1	1 - 1	0	5	pCi/L	N	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 Contaminations
Atrazine – UTRWD	6/27/2016	0.34	ND - 0.34	3	3	ppb	N	Herbicide runoff.
Simazine – UTRWD	6/27/2016	0.08	ND - 0.08	4	4	ppb	N	Herbicide runoff.
Bis(2-Ethylhexyl) phthalate COL/Dallas	2016	2.7	< 0.05 - 2.7	6	0	ppb	N	Discharge from rubber and chemical factories.
(1) EPA considers 50 pCi/L to be the level of concern for beta particles.								

Turbidity	Collection Date	Highest Single Measurement	Lowest Monthly % of Samples Meeting Limits	MCL	MCLG	Units	Violation	Likely Source of Contaminations
UTRWD	7/28/2016	0.039	100%	TT	N/A	NTU	N	Soil runoff.
COL/Dallas	2016	0.15	100%	TT	N/A	NTU	N	Soil runoff.

Information Statement: Turbidity is a measurement of the cloudiness of water caused by suspended particulars. It is monitored because it is a good indicator of water quality and the effectiveness of the treatment plants filtration process.

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 (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.
Maximum Contaminant Level Goal (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.
Maximum Residual Disinfectant Level (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 (MRDLG):	The level of a drinking water disinfectant below which there is no know 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
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.
ppt:	parts per trillion, or nanograms per liter (ng/L)
ppq:	parts per quadrillion, or pictograms per liter (pg/L)

Water Loss

In the water loss audit submitted to the Texas Water Development Board for the time period of January 1, 2016 to December 31, 2016, Denton County FWSD No. 1-A's water system lost an estimated **5.24%** of the system input volume. If you have any questions about the water loss audit, please call (972) 899-9745.

Disinfectant Residual

Type of Disinfectant	Year	Average Level of Disinfectant Residuals	Minimum Level of Disinfectant Residuals	Maximum Level of Disinfectant Residuals	MRDL	MRDLG	Units	Violation	Likely Source of Contaminations
Chloramines	2016	2.58	.60	3.90	4.0	4.0	ppm	N	Water additive to control microbes.

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 Contaminations
0	0	0	-	0	N	N/A

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 Exceeding AL	Units	Violation	Likely Source of Contaminations
Copper	2016	1.3	1.3	1.1	0	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	2016	0	15	2.7	0	ppb	N	Corrosion of household plumbing systems; Erosion of natural deposits.

Regulated Contaminants

Denton County FSWD #1-A Castle Hills (District); Upper Trinity River Regional Water Dist. (UTRWD); City of Lewisville (COL)

Disinfectants and Disinfections By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violations	Likely Source of Contaminations
Haloacetic Acids (HAA5) - District	2016	23.9	7.0 - 23.9	No goal for the total.	60	ppb	N	By-product of drinking water disinfection.
Haloacetic Acids (HAA5) - UTRWD	9/1/2016	20	7.1 - 20.0	No goal for the total.	60	ppb	N	By-product of drinking water disinfection.
Haloacetic Acids (HAA5) - COL/ Dallas	2016	19.2	< 2.0 - 19.2	N/A	60	ppb	N	By-product of drinking water disinfection.
Total Trihalomethanes (TTHM) - District	2016	16.4	7.18 - 16.4	No goal for the total.	80	ppb	N	By-product of drinking water distribution.
Total Trihalomethanes (TTHM) - UTRWD	9/1/2016	33	11.2 - 33.0	No goal for the total.	80	ppb	N	By-product of drinking water distribution.
Total Trihalomethanes (TTHM) - COL/ Dallas	2016	26	6.7 - 26.0	N/A	80	ppb	N	By-product of drinking water distribution.
Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contaminations
Nitrate (measured as Nitrogen) - District	2016	0.934	0 - 0.934	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Nitrate (measured as Nitrogen) - UTRWD	3/30/2016	0.671	0.474 - 0.671	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Nitrate (measured as Nitrogen) - COL/ Dallas	2016	.538	0.220 - 0.538	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Nitrite (measured as Nitrogen) - District	2016	0.136	< 0.004 - 0.136	1	1	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Antimony COL/Dallas	2016	0.27	< 0.200 - 0.27	6	6	ppb	N	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.
Arsenic - COL/ Dallas	2016	0.80	< 0.7 - 0.80	10	0	ppb	N	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Barium - UTRWD	6/15/2016	0.039	0.037 - 0.039	2	2	ppm	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Barium - COL/ Dallas	2016	0.025	0.010 - 0.025	2	2	ppb	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Bromate - UTRWD	10/10/2016	6.77	1.23 - 6.77	10	0	ppb	N	By-product of drinking water disinfection.
Bromate - COL/ Dallas	2016	< 10	< 0.03 - < 10	10	0	ppb	N	By-product of drinking water disinfection.
Chloramines - UTRWD	10/29/2016	3.6	3.2 - 3.6	4.0	4.0	ppm	N	Water additive used to control microbes.
Chromium (Total) - COL/Dallas	2016	0.77	0.48 - 0.77	100	100	ppb	N	Discharge from steel and pulp mills; Erosion of natural deposits.
Cyanide - UTRWD	6/7/2016	0.134	N/A	200	200	ppb	N	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories.
Cyanide - COL/ Dallas	2016	164.0	6.45 - 164.0	200	200	ppb	N	Discharge from steel/metal factories; discharge from plastic and fertilizer factories.
Fluoride - UTRWD	3/30/2016	0.102	ND - 0.102	4	4.0	ppm	N	Water additive; erosion of natural deposits; discharge from fertilizer and aluminum factories.
Fluoride - COL/ Dallas	2016	1.02	0.544 - 1.02	4	4.0	ppm	N	Erosion of natural deposits; Water additive which promotes strong teeth.
TOC - UTRWD	5/23/2016	5.23	2.10 - 5.23	TT	N/A	ppm	N	Naturally present in the environment.