

Cherokee County Rural Water District #11

2016 Water Quality Report

We're pleased to present to you this year's Annual Water Quality Report. This report is designed to inform you about the quality of water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. Our primary water source is surface water from Double Spring Creek. The Source Water Assessment gives Double Spring Creek a Qualitative Susceptibility Rating of Moderate. Our secondary water source is surface water from 14 Mile Creek. We purchase approximately 5% of our water from Tahlequah Public Works Authority, which is treated surface water from the Illinois River. Cherokee County Rural Water District #11 is in the planning stages of upgrading existing facilities to aid in the compliance of the future D.E.Q. regulations. We are pleased to report that our drinking water is safe and meets Federal and State requirements.

The Double Springs Creek and Fourteen Mile Creek are important drinking water sources for Hulbert and the surrounding area. The drainage watersheds that feed each of these water sources has a positive or negative effect upon water quality depending upon the activities conducted within the watershed. If you live or work within the drainage areas of the Double Springs Creek and Fourteen Mile Creek please take time to consider the following items:

- Read labels and follow manufactures guidelines and safety warnings when selecting and using chemical products
- Use caution when handling chemicals and filling containers or storage tanks to prevent spilling chemicals on the ground
- Do not improperly dispose of unwanted chemicals by dumping them on the ground or down drains, which end up in septic systems.
- Implement Agricultural Best Management Practices when using fertilizers and pesticides
- Check septic tanks every year to determine if they need to be cleaned in order to maintain proper operation.

By protecting the quality of drinking water sources, you protect your health and the health of the public. Should you have questions, contact your public water supply or the Oklahoma Department of Quality.

This report shows our water quality and what it means. If you have any questions about this report or concerning your water utility, please contact Brenda Spencer at 918-772-2915. The District's address is P.O. Box 190, Hulbert, OK 74441. We want our valued customers to be informed about their water district. You are welcome to attend any of our regularly scheduled meetings. They are held at 6:30 p.m., on the second Monday of each month at the Rural Water District #11 office, 117 East Main, Hulbert, OK.

Cherokee County Rural Water District #11 routinely monitors for constituents in your drinking water according to Federal and state laws. The following table contains scientific terms and measures, some of which may require explanation and the table shows the results of our monitoring for the period of January 1, 2016 to December 31, 2016.

DEFINITIONS:

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 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.

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.

Parts per million (ppm) or Milligrams per liter (mg/l) - one part of contaminant per million parts of water.

Parts per billion (ppb) or Micrograms per liter (ug/l) - one part of contaminant per billion parts of water.

Non-Detects (ND) - Laboratory analysis indicates that the constituent is not present.

NA: - Not applicable.

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

TEST RESULTS

Contaminant	Violation Y/N	Highest Level Detected	Range Detected	MCL	MCLG	Likely Source of Contamination
Microbiological Contaminants						
Total Coliform Bacteria (System takes ≤40 monthly samples)	N	None	None	1 Positive monthly sample	0	Naturally present in the environment
Turbidity (NTU) <i>(highest single measurement)</i>	N	0.23 NTU		TT = 1 NTU	N/A	Soil runoff
Turbidity (NTU) <i>(Lowest monthly% meeting limit)</i>	N	100%	0.3 NTU		N/A	Soil runoff
Inorganic Contaminants						
Barium (ppm) Collection Date 2013	N	0.052 ug/l	0.052- 0.052 ug/l	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper (ppm) Collected 2015	N	.176 ppm		AL=1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
If lab result shows that 90 th percentile of the sample is less than 0.005 mg/L (or 5ug/L) then it is considered a non-detect.						
Lead (ppb) collected 2015 <i>Action Level – 90% of samples must be below this level.</i>	N	<5 ug/l		AL=15	0	Corrosion of household plumbing systems, erosion of natural deposits
Nitrate - NO ₃ (ppm) (as Nitrogen) 2016	N	1 mg/l	0.888- 0.888 ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Beta/photon emitters 9-2011	N	1.51 mrem/yr	1.51 – 1.51	4	0	Decay of natural and man-made deposits.
Combined Radium 226/228 9-2011	N	0.151 pCi/L	0.151 – 0.151	5	0	Erosion of natural deposits.
Gross alpha excluding radon and uranium 9-2011	N	0.688 pCi/L	0.668 – 0.688	15	0	Erosion of natural deposits.

Stage 2 DBP Rule requires some systems to complete an Initial Distribution System Evaluation (IDSE) to characterize DBP levels in their distribution systems and identify locations to monitor DBPs for Stage 2 DBP Rule compliance. The following table summarizes the individual sample results for the IDSE monitoring in 2016:

Haloacetic Acids (HAA5) (ppb) * 2016	N	32	4.45-48.6 ppb	60	No goal for the Total	By-product of drinking water disinfection
Total Trihalomethanes (TTHm) * 2016	N	45	11.4 – 73.6 ppb	80	No goal for the Total	By-product of drinking water disinfection.
Chlorine 2016	N	1	1-1	MRDL = 4	MRDL = 4	Water additive used to control microbes.

Consumer Confidence Rule: The consumer Confidence Rule requires community water systems to prepare and provide to their customers annual consumer confidence reports on the quality of the water delivered by the systems. Violation type: CCR report. Violation begin 07-01-2016 violation end: 01-12-2017 Violation explanation: we failed to provide to you, our drinking water customers, an annual report that informs you about the quality of our drinking water and characterizes the risks from exposure to contaminants detected in our drinking water.

* Not all sample results may have been used for calculating the Highest Level Detection because some results may be part of an evaluation to determine where compliance sampling should occur in the future.

Total Organic Carbon: The percentage of Total Organic Carbon (TOC) removal was measured each month and the system met all TOC removal requirements set.

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 we treat it 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 stormwater 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 and residential uses.

**Radioactive contaminants*, which are naturally occurring.

**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 stormwater runoff, and septic systems.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

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.

All sources of drinking water are subject to potential contamination by constituents that are naturally occurring or are man-made. Those constituents can be microbes, organic or inorganic chemicals, or radioactive materials. All 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

* * Please call our office 918-772-2915 if you have questions.

TAHLEQUAH PUBLIC WORKS AUTHORITY
Serving People IS Our Business

101 N. College Ave. P.O. Box 29
Tahlequah, Ok. 74465
(918)456-2564 Fax: (918)456-5690

2016 Annual Drinking Water Quality Report

The Tahlequah Public Works Authority (T.P.W.A.) is pleased to present to you this year's Annual Water Quality Report. This report is designed to inform you about the quality of water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. Our water source is surface water from the Scenic Illinois River and Tenkiller Ferry Lake. The Illinois River supplies surface water to the city's 7 million gallon per day treatment facility located at 2260 Riverview Drive on the east side of Tahlequah. Tenkiller Lake supplies surface water to Tahlequah's state of the art 1.5 million gallon per day Treatment Facility located at 22141 W. 863 Rd. Parkhill, OK. T.P.W.A. supplies potable water to 5 water districts, The Cherokee Nation and Sequoyah High School Complex, and the City of Tahlequah in Cherokee County.

This report shows our water quality and what it means. In our effort to supply you with the safest possible product, the Tahlequah Water Treatment Facilities chlorinate the water supply for disinfection of viruses and bacteria. Fluoride is also added to enhance dental protection. The levels of these two additives are monitored daily to ensure proper quantities are administered. If you have any questions about this report or concerning your water quality, please contact Jerry Linn, Chief Operator and Superintendent at the Tahlequah Water Treatment Facility (918)456-2123. We want you, our valued customers, to be informed about your water utility. You are welcome to attend any of our regularly scheduled board meetings. They are held at the Utilities Building located at 101 North College Ave., Tahlequah. Please contact the office at (918)456-2564 to request the date and time of any particular meeting.

The Tahlequah Water Treatment Facilities routinely monitor for constituents in your drinking water according to Federal and State laws. The following table shows the results of our monitoring for the period of January 1 to December 31, 2016. Some of the data may be more than one year old because the State allows us to monitor for some contaminants less often than once per year.

DEFINITIONS:

- *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.
- *Action Level (AL)* - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- *Treatment Technique (TT)* A required process intended to reduce the level of a contaminant in drinking water.
- *Parts per million (ppm) or Milligrams per liter (mg/l)* - one part of contaminant per million parts of water. This level corresponds to one minute in two years or a single penny in \$10,000.
- *Parts per billion (ppb) or Micrograms per liter (ug/l)* - one part of contaminant per billion parts of water. This level corresponds to one minute in 2,000 years or a single penny in \$10,000,000.
- *Nephelometric Turbidity Unit (NTU)* - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- *Picocuries per liter (pCi/L)* - picocuries per liter is a measure of the radioactivity in water.
- *Non-Detects (ND)* - Laboratory analysis indicates that the constituent is not present.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

All sources of drinking water are subject to potential contamination by constituents that are naturally occurring or are man-made. Those constituents can be microbes, organic or inorganic chemicals, or radioactive materials. All 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800)426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800)426-4791.

In our continuing efforts to maintain a safe and dependable water supply it may be necessary to make improvements in your water system. The costs of these improvements may be reflected in the rate structure. Rate adjustments may be necessary in order to address these improvements

For more information or questions on the services we provide please visit our website <http://www.tahlequahpwa.com> or call (918)456-2564.

WATER QUALITY DATA
2016

MICROBIOLOGICAL CONTAMINANTS

Substance	MCL	Maximum Level Detected	EPA MCLG (EPA Goal)	2016 Violations	Sources of Contaminant
Total Coliform Bacteria	15 (fifteen) monthly samples monitored per month.	0 samples tested positive in year 2016	0% of monthly samples testing positive for coliform	None	Naturally present in the environment

Substance	MCL	Maximum Level Detected	Lowest Monthly Percentage	2016 Violations	Sources of Contaminant
Turbidity	TT ≤ 0.3 NTU in ≥ 95% of monthly samples taken and TT ≤ 1 NTU in a single sample	0.36 NTU in any single sample in year 2016	≤0.1 NTU in 96% of all samples taken within one month	None	Agriculture, Geological soil runoff

RADIOCHEMICAL CONTAMINANTS

Substance	MCL	Maximum Level Detected	2016 Violations	Sources of Contaminant
Alpha Emitters	15 pCi/L	0.198 pCi/L	None	Erosion of Natural Deposits
Beta/Photon Emitters	50 pCi/L	3.09 pCi/L	None	Decay of Natural Deposits

TOTAL TRIHALOMETHANES (Stage 2 DBP Rule)

Substance	MCL	Highest Quarterly Running Average	Range of Detections	2016 Violations	Sources of Contaminant
Total Trihalomethanes	80 ppb	56 ppb	27 ppb to 125 ppb	None	Chlorination By-Product

TOTAL Haloacetic Acids (Stage 2 DBP Rule)

Substance	MCL	Highest Quarterly Running Average	Range of Detections	2016 Violations	Sources of Contaminant
Total Haloacetic Acids	60 ppb	41.00 ppb	15.3 ppb to 120 ppb	None	Chlorination By-product

INORGANIC CONTAMINANTS

Substance	MCL	Maximum Level Detected	EPA MCLG (EPA Goal)	2016 Violations	Sources of Contaminant
Barium	2 ppm	0.033 ppm	2 ppm	None	Drilling waste, natural erosion
Fluoride	4 ppm	0.6 ppm	4 ppm	None	Erosion of natural deposits; water additive which promotes strong teeth
Nitrate (NO ₃) As Nitrogen	10 ppm	2.0 ppm	10 ppm	None	Runoff from fertilizer use, septic tanks or sewage

LEAD AND COPPER (Regulated at Customer Tap) Date Sampled December 2015

Substance	Action Level *	90% Sample Detection	2016 Violations	Sources of Contaminant
Lead	15 ppb	BPQL	None	Corrosion of home water pipes
Copper	1.3 ppm	0.19 ppm	None	Corrosion of home water pipes

* Action Level – 90% of samples must be below this level.