



2016 Annual Drinking Water Quality Report City of Enid

We're very pleased to provide you with this year's Annual Quality Water Report. We want to keep you informed about the excellent water and services we have delivered to you over the past year. Our goal is and always has been, to provide to you a safe and dependable supply of drinking water. Our water source is **ground** water drawn from 5 different well fields situated in and around the Enid area.

We have a source water protection plan (SWAP) available from our office at the Martin Luther King Building at 401 W. Garriott that shows the vulnerability medium. Additionally more information such as potential sources of contamination are listed such as nitrates, etc.

I'm pleased to report that our drinking water is safe and meets Federal and State requirements.

If you have any questions about this report or concerning your water utility, please contact **Bruce Boyd at (580) 616-7341**. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings of the Enid City Commission. They are held on **the first and third Tuesdays of each month at 401 W. Garriott at 6:30 p.m. in the City Council Chamber**.

The City of Enid routinely monitors for constituents in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of January 1st to December 31st, 2016. (Some of our data may be more than one year old because the state allows us to monitor for some contaminants less often than once per year.) All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It's important to remember that the presence of these contaminants does not necessarily pose a health risk.

WATER QUALITY DATA TABLE

The table below lists all of the drinking water contaminants we detected for the calendar year of this report. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report.

In this table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

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

Parts per million (ppm) or Milligrams per liter (mg/l)

Parts per billion (ppb) or Micrograms per liter (ug/l)

Parts per trillion (ppt) or Nanograms per liter (nanograms/l)

Parts per quadrillion (ppq) or Picograms per liter (picograms/l)

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

Millirems per year (mrem/yr) - measure of radiation absorbed by the body.

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.

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) - (mandatory language) A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Maximum Contaminant Level (MCL) - (mandatory language) The MCL is 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 - (mandatory language) The MCLG is 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.

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	Dated Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	2015	1.3	1.3	0.618	1	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	2015	0	15	0	1	ppb	N	Corrosion of household plumbing systems; Erosion of natural deposits.

Water Quality Test Results

- 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.
- 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.
- Maximum residual disinfectant level goal or 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 disinfectant 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.
- Definitions: The following tables contain scientific terms and measures, some of which may require explanation.
 - ppb: Micrograms per liter or parts per billion - or one ounce is 7,350,000 gallons of water.
 - na: Not applicable.
 - Avg: Regulatory compliance with some MCLs are based on running annual average of monthly samples.
 - ppm: Milligrams per liter or parts per million - or one ounce is 7,350 gallons of water.

Test Results						
Contaminant	Violation Y/N	Highest Chlorine Level Detected	Range Detected	MCL	MCLG	Likely Source of Contamination
Total Coliform Bacteria (System takes 50 monthly samples)	N	2		Total No. of Positive E. Coli of Fecal Coliform "0"	0	Naturally present in the environment

Regulated Contaminants

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Chlorine	2016	2	1-2	MRDLG = 4	MRDL = 4	ppm	N	Water additive used to control microbes.
Haloacetic Acids (HAA5)*	2016	3	1.15-8.27	No goal for the total	60	ppb	N	By-product of drinking water disinfection.
Total Trihalomethanes (TTHM)	2016	26	8.79-45.8	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
Arsenic	2015	5	0-5	0	10	ppb	N	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Barium	2015	0.37	.178-.37	2	2	ppm	N	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Fluoride	2015	0.55	.4-.55	4	4	ppm	N	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Nitrate (ppm) (as Nitrogen)	2016	9	7.1-8.19	10	10	ppm	N	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Radioactive Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Beta/photon emitters	2016	4.29 pCi/L	1.01-5.71	0	50 pCi/L	pCi/L	N	Decay of natural and man-made deposits.
Combined Radium 226/228	2016	1	.095-2.31	0	5	pCi/L	N	Erosion of natural deposits.
Gross alpha excluding radon and uranium	2016	2	.62-4.43	0	15	pCi/L	N	Erosion of natural deposits.
Uranium	2016	3	2.09-3.43	0	30	ug/1	N	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.

Violations

None				
Violation Type	Violation Begin	Violation End	Violation Explanation	
None				

Microbiological Contaminants:

(1) Total Coliform. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially- harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

Radiochemical Contaminants:

(2) Gross Beta. Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.

(3) Gross Alpha. Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.

(4) Combined Radium 226/228. Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.

(5) Uranium. Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.

Inorganic Contaminants:

(6) Arsenic. Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

(7) Barium. Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

(8) Chlorine. Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.

(9) Copper. Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

(10) Cyanide. Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.

(11) Fluoride. Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth.

(12) Lead. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

(13) Nitrate. Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.

(14) Nitrite. Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.

(15) Nitrate-nitrite. Infants below the age of six months who drink water containing nitrate-nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

(16) Selenium. Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.