

2016 Annual Drinking Water Quality Report

Jackson County Water Company

Public Water System I.D. OK 2003306

We're very pleased to provide you with this year's Annual Drinking Water Quality 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. This report shows our water quality and what it means.

Our water source is ground water drawn from fifteen wells located east of Blair produced from terrace deposits and the surface water is purchased from the City of Altus who draws their water from Tom Steed reservoir. An analysis of contamination susceptibility of our source water has been done. The analysis showed that our water's susceptibility to contamination is MODERATE. We are working on the source water protection plan. Once it is completed the source water protection plan will be available in our office. Information such as potential sources of contamination is listed in the plan.

If you have any questions about this report or concerning your water utility, please contact David Parsons at (580)563-2374. 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. They are held on the second Tuesday of each month at 7:00 AM at the Jackson County Water Company Office in Warren Oklahoma.

Jackson County Water Company routinely monitors for contaminants 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) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Maximum Contaminant Level (MCL) - 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- 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.

WATER QUALITY DATA

Contaminant	Violation Yes/No	Highest Level Detected	Range Detected	MCL	MCLG	Likely Source of Contamination
Microbiological Contaminants						
Total Coliform Bacteria (System takes <40 monthly samples)	N	0		5% positive	0	Naturally present in the environment
Inorganic Contaminants						
Copper (ppm)	N	0.1 1 2013		AL-1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Nitrate - N03 (ppm) (as Nitrogen) — Nitrate in drinking water at levels above 10ppm 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.	N	10	4.31-10.2	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (as Nitrogen) (ppm)	N	0.11 2015	0.11-0.11	1	1	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

Fluoride (ppm)	N	0.4 2015	0.4-0.4	4.0	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Volatile Organic Contaminants						
Haloacetic Acids (HAAS) (ppb)	N	30	0 – 46.9	60	N/A	By-product of drinking water chlorination
TTHM [Total trihalomethanes] (ppb)	Y	101	2.6-115	80	N/A	By-product of drinking water chlorination

RADIOACTIVE CONTAMINANTS

Beta/photon emitters (mrem/yr)	N	3.98	0.804 -3.98	4	0	Decay of natural and man-made deposits.
Combined Radium (pci/L) 226/228	N	0.783	0.153 – 0.783	5	0	Erosion of natural deposits.
Gross alpha excluding radon and uranium (pci/L)	N	1	0 – 1.48	15	0	Erosion of natural deposits.

What does this mean?

The table shows that our system had one violation during the year. The violation was for exceeding the Total Trihalomethane (TTHM) limit of 80 ppb.

What happened?

This is a continuation of a problem from water purchased from the City of Altus. More information can be found on the attached CCR report from Altus. The potential adverse health effects are some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer. The noted violations did not pose an immediate risk. If they had, you would have been notified immediately.

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

We routinely monitor for the presence of drinking water contaminants. Our water system recently violated drinking water standards. Although this was not an emergency, as our customers, you have a right to know what happened, what you should do, and what we are doing to correct this situation.

Jackson County Water Company has a requirement to test for lead and copper in the drinking water. Samples test results were not received by the required deadline and a Notice of Violation has been sent to Jackson County Water Company.

What should I do? There is nothing you need to do.

What does this mean? This is not an emergency. If it had been, you would have been notified immediately. There was no change in water quality.

What happened? Samples were taken in a timely manner but were not delivered to the Laboratory on time by a third party shipping company.

What is being done? This violation is a result of a third party delivery error that caused Jackson County Water Company to miss a deadline. Jackson County Water Company has changed test sample delivery procedures. Sample delivery times now include in sufficient time to allow resampling if future samples are not delivered again.

For further information contact: David Parsons, Manager, at 580-563-2374. Written inquiries should be addressed to Jackson County Water Company, 15402 S CR 2111, Blair, Oklahoma 73526.

This notice is being sent to you by Jackson County Water Company.

PWSID #02003306 NOV# P-2003306-14-1

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 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 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 storm water runoff, and septic systems.

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.

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 (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).

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. Jackson County Water Company 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>.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a significant increased risk of having the described health effect.

Thank you for allowing us to continue providing your family with clean, quality water. In order to maintain a safe and dependable water supply we continually make improvements that will benefit all of our customers. These improvements are sometimes reflected as rate structure adjustments. We appreciate your support and understanding.

Please call our office if you have questions at 563-2374.

We at Jackson County Water Company work around the clock to provide top quality water to every tap, said David Parsons, Manager.

City of Altus
Public Water System I.D. 1011501
Annual Water Quality Report
2016

We're pleased to present this year's Annual Water Quality Report. This report is designed to inform you about the water quality and services we provide. We want you to be aware of our continuing efforts to improve the water treatment process and protect our water resources. Our goal is to provide a safe, high quality and dependable supply of drinking water. We are committed to insuring the quality of your water. Our primary water source is The Mountain Park Conservancy District, which provides untreated water from Tom Steed Reservoir. The reservoir is located in southern Kiowa County approximately six miles north of Snyder, Oklahoma. This reservoir is classified by the Environmental Protection Agency as a "surface water source". The Mountain Park Conservancy District has a source water protection plan with a copy available at our office that shows the vulnerability of our surface source water as HIGH. Additional information such as potential sources of contamination is listed. This plan is available for public view upon written request submitted to the office of Public Works at 509 S. Main, Altus OK 73521. Our secondary source of water is the Altus Well Field in Wilbarger County Texas which draws groundwater from the Seymour Aquifer. This source of water is classified as a "ground water source".

This report indicates the quality of our water and what it means to you.

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

If you have any questions about this report or your water utility, please contact Gene Leister, Water Treatment Supervisor at 481-2270 or Johnny Barron, Public Works Director at 481-3518. We want all our customers to be informed about their water utility. The water utility is managed by the Altus Municipal Authority (AMA). AMA meetings are open to the public and are held on the first and third Tuesdays of each month at 6:30 p.m. in the city council chambers at City Hall, 509 S. Main Street.

Altus Water Treatment personnel routinely monitor the drinking water for constituents according to Federal and State laws. The table below shows results of our monitoring for the period of January 1st to December 31st, 2016. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some constituents. It's important to remember that the presence of these constituents does not necessarily pose a health risk.

In the 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:

Maximum Contaminant Level (MCL) - 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 (MCLG) -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.

Nephelometric Turbidity Unit (NTU) - a nephelometric turbidity unit is a measure of the clarity of water. Turbidity less than 5 NTU is not typically noticeable to the average person.

Parts per million (ppm) or Milligrams per liter (mg/l) – ppm is a measure of the concentration of a substance in water where one unit of substance is diluted into one million units of water.

Parts per billion (ppb) or Micrograms per liter (ug/l) - ppb is a measure of the concentration of a substance in water where one unit of substance is diluted into one billion units of water.

Total Trihalomethanes (TTHM) - TTHMs are a range of chlorinated, carbon-based chemicals that form when chlorine reacts with certain organic compounds that are naturally found in surface water.

City of Altus Public Water Supply 2016 Lab Results I.D. # OK1011501

Contaminant	Violation Yes/No	Highest Level Detected	Range Detected	MCL	MCLG	Likely Source of Contamination
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Microbiological Contaminants

Total Coliform Bacteria	No	0	None	5 %	0	Naturally present in the environment
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Turbidity (NTU)	No	0.28 NTU Less than 0.3 NTU's in 100 % of monthly samples.	0.02-0.28	5 NTU Less than 0.3 NTU's in 95% of monthly samples	N/A	Soil runoff
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Volatile Organic Contaminants

Total trihalomethanes (TTHM)	Yes	138 ppb Highest quarterly avg.	22-146	80 ppb	0	By-product of drinking water chlorination
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Total haloacetic acids (THAA5)	No	30 ppb Highest quarterly avg.	4-41	60 ppb	0	By-product of drinking water chlorination
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Inorganic Contaminants

Chlorites	Yes	1.18 ppm	0-1.18	1.0 ppm	0.8 ppm	Additive used to control microbes
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Fluoride	No	0.22 ppm	0.13-0.22	4.0 ppm	4.0 ppm	Erosion of natural deposits, discharge from fertilizer and aluminum factories. Water additive which promotes strong teeth.
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Nitrate (as Nitrogen)	No	0.28 ppm	0.28-0.28	10 ppm	10 ppm	Runoff from fertilizer use, erosion of natural deposits.
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Total Organic Carbon (avg. removal ratio for the year)	No	1.01	1.01-2.44	Minimum removal ratio 1.0	N/A	Naturally present in the environment
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What does this mean?

This table shows our system had two violations during the year. The violations were for exceeding the Total Trihalomethane (TTHM) limit of 80 ppb and chlorite limit of 1.0 ppm.

TTHM violation - What happened?

The drinking water produced in early 2016 had elevated levels of TTHM above the established EPA standard. The cause of this was inadequate removal of total organic compounds during the treatment process.

The noted violations did not pose an immediate risk. If they had, you would have been notified immediately. However, some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of cancer.

Permanent corrective measures were completed and TTHM levels have been well below the maximum contaminant level of 80 ppb since April 2016. The following table shows quarterly TTHM data for 2016. Since compliance sampling for TTHMs is done every three months and since the MCL is based on the average of the four most recent sample events, it has taken time to reach a level of full compliance. The problem was fixed in April 2016 but it took another nine months of consistently low TTHMs levels to be able to earn the status of compliant.

Sample Date	Sample Location	TTHM Concentration parts per billion (ppb)	Quarterly Average parts per billion (ppb)	Yearly Average (ppb) (previous four quarters)
03/05/2016	Scott Street	136.0	123.1	138.2
03/05/2016	S. Carver Road	119.7		
03/05/2016	N. Ranch Road	146.9		
03/05/2016	AAFB	90.8		
06/07/2016	Scott Street	67.1	55.5	115.7
06/07/2016	S. Carver Road	74.3		
06/07/2016	N. Ranch Road	42.6		
06/07/2016	AAFB	38.0		
09/21/2016	Scott Street	84.5	62.2	90.9
09/21/2016	S. Carver Road	70.0		
09/21/2016	N. Ranch Road	59.4		
09/21/2016	AAFB	35.0		
12/26/2016	Scott Street	49.4	41.6	72.6
12/26/2016	S. Carver Road	43.4		
12/26/2016	N. Ranch Road	51.6		
12/26/2016	AAFB	21.8		

How did we fix it?

The THM problem was fixed by rehabilitation of the City's well field and by modifications to the water treatment plant that brought the reverse osmosis treatment facility back into operation. Reverse Osmosis is the most advanced method of water treatment and can even make ocean water drinkable. The RO treatment process removes virtually all organics and minerals which helps water quality and softens the water. The reverse osmosis treatment facility began operation on April 8, 2016.

The City's well field was restored to operation in June 2016 and pumps groundwater to the water treatment plant. Without oxygen, groundwater naturally does not support the biological processes that produce organic compounds in water. Therefore, well water typically has no organic chemicals to react with chlorine.

Since June 2016, your drinking water has been a three-way blend of conventionally treated water, Reverse Osmosis treated water, and well water which meets all state and federal standards.

Chlorite Violation - What happened?

Local analysis of chlorite indicated we were well below the MCL, however, compliance testing results with our contract lab indicated levels above the MCL. Chlorite occurs in drinking water when chlorine dioxide is added at the water treatment plant as a disinfectant to inhibit the growth of microorganisms in the filter media. Chlorine dioxide is used, instead of chlorine, to limit the formation of disinfection byproducts such as TTHMs. When ingested, chlorite (ClO_2) acts as an ion binding with common minerals such as sodium to form mineral salts such as sodium chlorite (NaClO_2). Chlorite is not considered especially harmful and is not carcinogenic. Toxicology studies suggest that exposures to high levels of chlorite over many years may have mild effects on the brain and liver.

What is being done?

- The chlorine dioxide feed system is being monitored to keep chlorite formation to a minimum.

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 (800-426-4791).

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 prior to treatment include:

- *Microbial contaminants*, such as viruses and bacteria, which may come from agricultural, livestock operations, wildlife, sewage treatment plants and septic systems.
- *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 two liters of water everyday at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.**

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those with cancer and 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).

Thank you for allowing us to continue providing your family with clean, quality water. In order to maintain a safe and dependable water supply we continually make improvements that will benefit all of our customers. These improvements are sometimes reflected as rate structure adjustments. We appreciate your support and understanding. For more information, please contact Johnny Barron, City Engineer/Public Works Director, at 481-3518 or Gene Leister, Water Treatment Plant Supervisor, at 481-2270. Written inquiries should be addressed to City of Altus, Attn: Johnny Barron 509 S. Main, Altus, Oklahoma 73521

* Oklahoma Department of Environmental Quality Guidance dated 26 March, 2008.