

PWS ID# 3003303

**301 N 1st Street
Altus AFB, OK 73521**

30 June 2017

Re: 2016 Annual Water Quality Report
(Consumer Confidence Report)

Dear Water Customer:

Altus Air Force Base purchases drinking water from the City of Altus and regularly monitors the supply to ensure it is safe for consumption. Attachment 1 from the City of Altus, and the table below, show the quality of your water. Bioenvironmental Engineering (BE) is required to collect and test for bacteria, disinfection by-products, lead, and copper samples in addition to those already tested by the City of Altus. No bacteria were detected in the samples collected in 2016. Lead and copper sampling is conducted on a 3 year rotation and was last accomplished September 2015; therefore, samples will be taken again 2018. Please see the chart below for specific monitoring results.

Altus AFB Monitoring period of January 1 st thru December 31 st , 2016						
Microbiological Monitoring Results						
Contaminant	Violation Y/N	Range Detected	Highest Level Reported/Highest Average	MCL ¹	MCLG ²	Likely Source of Contamination
Total Coliform Bacteria (5 per month)	N	N/A	0	5%	0	Naturally present in the environment
Non-biological Monitoring Results						
Contaminant	Violation Y/N	Range Detected	Highest Level Reported/Highest Average	MCL	MCLG	Likely Source of Contamination
Total Trihalomethanes (TTHMs) (mg/L)	Y	0.037 - 0.168	0.139 Highest Quarterly Average	0.080	0	By-product of drinking water chlorination
Halo Acetic Acids (mg/L)	N	0.008 – 0.033	0.016 Highest Quarterly Average	0.060	0	By-product of drinking water chlorination
Lead and Copper (ug/L) (September 2015)	N	< 5.0 (Lead)	< 5.0 (Lead)	15.0 (Lead)	0	Corrosion of household plumbing systems
		18.3 – 995 (Copper)	995 (Copper)	1300 (Copper)	0	
Fluoride (mg/L)	N	0.15 -.6	.6	4	4	Erosion of natural deposits, discharge from fertilizer and aluminum factories. Water additive which promotes strong teeth.
Chlorites (ppm)	Y	.088 - 1.110	1.110	1.0	0.8	Additive used to control microbes
Nitrate (ppm) (as Nitrogen)	N	0 -.28	.28	10	10	Runoff from fertilizer use, erosion of natural deposits.
Control of DBP precursors TOC (Avg. Yearly Ratio)	N ³	.77 – 3.32	2.37 Highest Annual Average	Minimum removal ratio 1.0	N/A	Naturally present in the environment

1-Maximum Contaminant Level – highest level of contaminant allowed in drinking water

2-Maximum Contaminant Level Goal – level below which the is no known or expected health risk

3-Due to 4 Qtr Average, Jan-Mar 2016 TOC removal ratio was below 1.0 because of 4th Qtr 2015 sampling data, however Apr-Dec 2016 increased annual average above required minimum.

The noted violations did not pose an immediate risk. If violations noted above pose an immediate risk, BE is required to notify you immediately.

TTHM/TOC/Chlorite Violation Summary:

Altus AFB is currently meeting this standard and is in full compliance. The installation is required to comply with the disinfection by-product rule (DBPR). The requirement is a rolling 4-quarter average which must not exceed either the Total Trihalomethane (TTHM) limit of 0.080 mg/L or the Halo Acetic Acid (HAA) limit of 0.060 mg/L.

Altus AFB went into violation of the DBPR the 2nd Quarter of 2013. This was occurred due to the multi-year drought which caused significant water loss from the Tom Steed Reservoir and a relative increase of organic material concentrations. Combined, these changes directly affected Total Organic Carbon (TOC) levels. Due to rising level of TOCs, Altus city had to increase the level of chlorine to ensure our water was potable. As the chlorine levels were increased, elevated Chlorites and TTHM were generated as byproducts.

What is Being Done?

Altus AFB is currently receiving water that is below the Environmental Protection Agency (EPA) MCL of 0.080mg/L, and is in full compliance. The City of Altus has taken several steps to enhance the long-term quality of our water. Two well fields in North Texas have been reconditioned and are currently supplying naturally high quality water to the city. In addition, extensive upgrades to the city's reverse osmosis treatment system allow removal of TOCs from Tom Steed water effectively reducing the amount of chlorine necessary for purification. Altus city is currently blending well water with reverse osmosis treated water from Tom Steed which has resulted in an exceptionally high quality water supply and effectively maintaining TTHMs below regulatory limits. BE will continue monitoring the water quality and keep you informed of any changes.

Fluoride Summary:

Fluoride is a mineral that is naturally present in all water sources and has been proven to prevent tooth decay. While there is no regulatory standard for the minimum amount fluoride recommended in drinking water, in 2015, the US Department of Health and Human Services (DHHS) recommended, but did not mandate, fluoride concentrations of 0.7 mg/L. For your awareness, the Altus Water Treatment Plant's fluoride feeder went offline in March 2013 and currently, there are no plans to bring it back online. Despite that, low levels of natural fluoride levels continue to be detected in our water. To supplement your fluoride intake, the American Dental Association (ADA) recommends using fluoride containing toothpaste; preferably one displaying the ADA Seal of Acceptance. The ADA also recommends the use of fluoride mouth rinses in children over six years of age. We encourage you to have a conversation with your family's dentist on how best to maintain optimal dental hygiene.

For additional information regarding our local water supply, see Attachment 1 for summary sample results for the City of Altus 2016 Consumer Confidence Report. Should you have any questions or concerns regarding your water, please contact the Bioenvironmental Engineering office at (580) 481-5494.

Sincerely,



DEVIN P. BECKSTRAND, Col, USAF, MC, CFS
Commander, 97th Medical Group

Attachment:
City of Altus Annual Water Quality Report

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 (ClO₂) acts as an ion binding with common minerals such as sodium to form mineral salts such as sodium chlorite (NaClO₂). 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.

SUPPLEMENTAL IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER FROM 2015

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.

The City of Altus Has Levels of Total Trihalomethanes (TTHMs) Above Drinking Water Standards

Testing results we received for **January 2015** through **December 2015** show that our system exceeds the standard, or maximum contaminant level (MCL), for total trihalomethanes. The standard or MCL for total trihalomethanes is 0.080 mg/l. It is determined by averaging all the samples collected at each sampling location for the past 12 months. The level of total trihalomethanes averaged at our system's locations was **0.119, 0.151, 0.157, and 0.167 mg/L**.

What should I do? There is nothing you need to do unless you have a severely compromised immune system, have an infant or are elderly. These people may be at increased risk and should seek advice about drinking water from their health care providers.

What does this mean? This is not an emergency. If it had been, 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 getting cancer.

The City of Altus Did Not Meet Treatment Requirements

We routinely monitor your water for Total Organic Carbon Removal. This tells us whether we are effectively removing Organic Carbon from the water supply. Our latest calculations have shown that we didn't remove the average percentage of organic carbon required by EPA standards during the twelve-month period of **January 2015 through December 2015**.

What should I do? **You do not need to use an alternate water supply or take other actions.** However, if you have specific health concerns, consult your doctor

What does this mean? Total Organic Carbon has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include Trihalomethanes (THMs) and Haloacetic acids (HAAs). Drinking Water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.

The City of Altus had Levels of Chlorite Above Drinking Water Standards

We routinely monitor for the presence of drinking water contaminants. The arithmetic average of monthly (distribution system) testing results we received for March of 2016 is 1.1 mg/L which shows our system exceeds the MCL standard. The standard or MCL for chlorite is 1.0 mg/L.

What should I do? You do not need to use an alternative (e.g. bottled) water supply. However, if you have specific health concerns contact your doctor.

What does this mean? This is not an immediate health risk. If it had been you would have been notified immediately. However, EPA has determined that Chlorite is a health concern at high levels of exposure. Chlorite is formed as a byproduct of disinfection of water using Chlorine Dioxide. Some infants and young children who drink water containing Chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing Chlorite in excess of the MCL. Some people may experience anemia.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by the **City of Altus** PWSID#: OK1011501 NOV #: P-1011501-16-1

Date distributed: 6-29-17 Signed: Gene Leister, Water Treatment Supervisor