

**YOUR DRINKING WATER IS SAFE!**  
**2016**  
**Annual Consumer Confidence Report on the Quality of Drinking Water**  
**Tinker AFB for the Year 2015**  
**(Water System ID Number OK2005508)**

This year's Annual Water Quality Consumer Confidence Report is designed to inform you about the quality of water on base, to advance your understanding of drinking water and heighten awareness of the need to protect our precious water resources. Tinker AFB issues this annual report to meet requirements set under the "Consumer Confidence Reporting Rule" of the Safe Drinking Water Act (SDWA).

Bioenvironmental Engineering constantly monitors the system to meet all regulatory requirements. Our staff collects water samples from the water distribution system. These samples are then shipped to certified laboratories where all of the required water quality analyses are performed.

**Bottom Line:**

**Tinker's drinking water is safe and meets all federal and state requirements. No monitoring violations occurred during 2015. All detected analytes were at or below the Maximum Contaminant Level.**

**Where does our water come from?**

The Tinker AFB water system is primarily supplied by a system of wells ranging in depth from approximately 400 to 800 feet, drawing from the Garber-Wellington mudstone/sandstone aquifer. Water from the wells is chlorinated before entering the distribution system. Fluoride is added to the system on the west side of the base only, serving our non-industrial consumers. Tinker AFB can also use the Oklahoma City Stanley Draper water system as a secondary source of water. These connections are occasionally opened in the summer and during other peak demand periods. The water supplied by Oklahoma City is produced at the Lake Stanley Draper Drinking Water Plant, where it is treated to meet SDWA standards. The Stanley Draper system is the source of water for the Tinker Aerospace Complex (TAC). Individuals with questions regarding the water quality at TAC can go to the following website for 2014 OKC CCR: [http://www.okc.gov/ccr\\_2014.pdf](http://www.okc.gov/ccr_2014.pdf)

**How do contaminants get into drinking water?**

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 include:

- *Microbial contaminants*, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- *Pesticides and herbicides*, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- *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.
- *Organic 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 materials*, which can be naturally occurring or the result of oil and gas production and mining activities.

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 Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791).

**Source Water Assessment and Wellhead Protection Programs**

The OK Department of Environmental Quality (DEQ) conducted a contamination susceptibility assessment of Tinker's water system in 2003, under the Source Water Assessment and Protection Program. The overall contamination susceptibility was rated as "Low." The Tinker AFB Wellhead Protection Plan, written in April 2004, is used to protect the underground source of Tinker's drinking water. For more information on the Source Water Assessment and Wellhead Protection Programs contact the base Civil Engineering (CE) Restoration Division at (405) 736-4348.

**Who needs to take special precautions?**

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/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

**Water Quality Data Table**

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that were detected during 2015. Although many more contaminants were tested, only those substances listed below were found in your water. Some water quality parameters do not require annual testing. If the parameter was not tested in 2015, the sampling year is noted below. Terms used in the table are explained in the definitions below the table. ***In addition, Tinker AFB was selected by the EPA to be part of a drinking water study of Unregulated Contaminants. Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.*** These results are listed in a separate table below.

**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 Contamination        |
|--------------------------------|--|-------------------------|--|---|-----------|---------------------------------------|
| 0                              | 1 positive monthly sample.               | 1                       | No more than 5.0% samples total coliform-positive (TC-positive) in a | 0   | N         | Naturally present in the environment. |

**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 Over AL | Units | Violation | Likely Source of Contamination  |
|-----------------|--------------|------|-------------------|-----------------|-----------------|-------|-----------|---|
| Copper          | 2013         | 1.3  | 1.3               | 0.113           | 0               | ppm   | N         | Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems. |

Regulated Contaminants

| <u>Disinfectants and Disinfection By- Products</u> | <u>Collection Date</u> | <u>Highest Level Detected</u> | <u>Range of Levels Detected</u> | <u>MCLG</u>           | <u>MCL</u> | <u>Units</u> | <u>Violation</u> | <u>Likely Source of Contamination</u>  |
|--|------------------------|-------------------------------|---------------------------------|-----------------------|------------|--------------|------------------|--|
| Chlorine   | 2015                   | 1                             | 0 - 1                           | MRDLG = 4             | MRDL = 4   | ppm          | N                | Water additive used to control microbes.   |
| Total Trihalomethanes (TTHM)                       | 2015                   | 5.1                           | 0 – 5.1                         | No goal for the total | 80         | ppb          | N                | By-product of drinking water disinfection.   |
| <u>Inorganic Contaminants</u>                      | <u>Collection Date</u> | <u>Highest Level Detected</u> | <u>Range of Levels Detected</u> | <u>MCLG</u>           | <u>MCL</u> | <u>Units</u> | <u>Violation</u> | <u>Likely Source of Contamination</u>  |
| Barium   | 2015                   | 0.513                         | 0.296 - 0.513                   | 2                     | 2          | ppm          | N                | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.  |
| Chromium   | 2015                   | 17.6                          | 0 – 17.6                        | 100                   | 100        | ppb          | N                | Discharge from steel and pulp mills; Erosion of natural deposits.                            |
| Nitrate [measured as Nitrogen]                     | 2015                   | 1.0                           | 0 – 1.0                         | 10                    | 10         | ppm          | N                | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |
| <u>Radioactive Contaminants</u>                    | <u>Collection Date</u> | <u>Highest Level Detected</u> | <u>Range of Levels Detected</u> | <u>MCLG</u>           | <u>MCL</u> | <u>Units</u> | <u>Violation</u> | <u>Likely Source of Contamination</u>  |
| Beta/photon emitters                               | 2015                   | 2.73                          | 1.61 – 2.73                     | 0                     | 4          | Mrem/yr      | N                | Decay of natural and man-made deposits.  |
| Combined Radium 226/228                            | 2015                   | 3.18                          | 0 – 3.18                        | 0                     | 5          | pCi/L        | N                | Erosion of natural deposits.   |
| Gross alpha excluding radon and uranium            | 2015                   | 5.87                          | 1.99 - 5.87                     | 0                     | 15         | pCi/L        | N                | Erosion of natural deposits.   |
| <u>Volatile Organic Contaminants</u>               | <u>Collection Date</u> | <u>Highest Level Detected</u> | <u>Range of Levels Detected</u> | <u>MCLG</u>           | <u>MCL</u> | <u>Units</u> | <u>Violation</u> | <u>Likely Source of Contamination</u>  |
| Trichloroethylene                                  | 2015                   | 0.6                           | 0 - 0.6                         | 0                     | 5          | ppb          | N                | Discharge from metal degreasing sites and other factories.                                   |
| Carbon Tetrachloride                               | 2015                   | **6.4                         | 0 - 6.4                         | 0                     | 5          | ppb          | N                | Discharge from chemical plants and other industrial activities                               |

\*\* - Although the highest level detected was 6.4ug/l and the MCL is 5 ug/l a violation was not issued because the average of the samples taken in 2015 did not exceed the 5 ug/l MCL.

| Unit Descriptions |   |
|-------------------|---|
| Term              | Definition  |
| ppm               | parts per million, or milligrams per liter (mg/L) |
| ppb               | parts per billion, or micrograms per liter (µg/L) |
| pCi/L             | picocuries per liter (a measure of radioactivity) |
| NA                | not applicable                                    |
| ND                | Not detected                                      |

| Important Drinking Water Definitions |  |
|--------------------------------------|--|
| Term                                 | Definition   |
| MCLG                                 | Maximum Contaminant Level Goal: 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.   |
| MCL                                  | Maximum Contaminant Level: 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.   |
| TT                                   | Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.   |
| MRDLG                                | Maximum residual disinfection level goal. 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. |

|      |  |
|------|--|
| MRDL | Maximum residual disinfectant level. 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. |
| MPL  | State Assigned Maximum Permissible Level   |
| ALG  | Action Level Goal: 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.   |
| AL   | Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.  |

**Want additional information?**

If you have any questions about this Water Quality Report or other Tinker drinking water quality issues, please contact Mr. Douglas Woods at the Bioenvironmental Engineering Flight at (405) 734-7844. Additional information on drinking water quality may be obtained from the Oklahoma DEQ (405) 702-8100 and the EPA Safe Drinking Water Hotline (800) 426-4791.

This water quality report is also available on line at: <https://cs3.eis.af.mil/sites/OO-SE-MC-14/Drinking%20Water/Forms/AllItems.aspx> or <http://www.tinker.af.mil/library/environment/index.asp>.