2018 Consumer Confidence Report

Water System Name: **Beale AFB # 5810700** Report Date: 1 July 2019

We test the drinking water quality for many constituents as required by state and federal regulations. This report shows the results of our monitoring for the period of January 1 - December 31, 2018 and may include earlier monitoring data.

Este informe contiene información muy importante sobre su agua para beber. Favor de comunicarse Beale AFB a 530-634-2045 para asistirlo en español.

这份报告含有关于您的饮用水的重要讯息。请用以下地址和电话联系 Beale AFB 以获得中文的帮助: 530-634-2045.

Ang pag-uulat na ito ay naglalaman ng mahalagang impormasyon tungkol sa inyong inuming tubig. Mangyaring makipag-ugnayan sa Beale AFB, 6604 B. Street Bldg 26180, California, 95903 o tumawag sa 530-634-2045 para matulungan sa wikang Tagalog.

Báo cáo này chứa thông tin quan trọng về nước uống của bạn. Xin vui lòng liên hệ Beale AFB tại 530-634-2045 để được hỗ trợ giúp bằng tiếng Việt.

Tsab ntawv no muaj cov ntsiab lus tseem ceeb txog koj cov dej haus. Thov hu rau Beale AFB ntawm 530-634-2045 rau kev pab hauv lus Askiv.

Type of water source(s) in use: Ground Water

Name & general location of source(s): Beale AFB ground water originates from the Sierra Nevada Mountain Range and the water is drawn from 7 deep-water wells.

Drinking Water Source Assessment information:
The California Department of Public Health (CDPH) completed an assessment of our drinking water source in April 2001. In addition, in October 2005, Earth Tech, Inc. prepared a "Drinking Water Source Assessment and Protection Plan/Wellhead Protection Plan" for Beale AFB. This assessment is For Official Use Only (FOUO). The Drinking Water Source Assessment Program required permitted sources to be evaluated for susceptibility to various potential contaminating activities. This evaluation was performed for all of the base's nine well water sources in operation at that time. The evaluation indicated that the operation of a military installation ranks the highest among the potential contaminating activities. Time and place of regularly scheduled Drinking Water Working Group meeting is scheduled for the third Tuesday of the first month in a quarter at 0900.

You may request a summary of the assessment by contacting Mr. Edward Wydra, 9th Civil Engineer Squadron, Environmental Element at (530) 634-2619.

For more information, contact: Maj Bruce D. Auville Phone: (530) 634-2045

TERMS USED IN THIS REPORT

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

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 are set by the U.S. Environmental Protection Agency (USEPA).

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the

Secondary Drinking Water Standards (SDWS): MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Regulatory Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Variances and Exemptions: State Board permission to exceed an MCL or not comply with a treatment technique under certain conditions.

Level 1 Assessment: A Level 1 assessment is a study of the

California Environmental Protection Agency.

Maximum Residual Disinfectant Level (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.

Maximum Residual Disinfectant Level Goal (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.

Primary Drinking Water Standards (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Level 2 Assessment: A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

ND: not detectable at testing limit

ppm: parts per million or milligrams per liter (mg/L)

ppb: parts per billion or micrograms per liter (µg/L)

ppt: parts per trillion or nanograms per liter (ng/L)

ppq: parts per quadrillion or picogram per liter (pg/L)

pCi/L: picocuries per liter (a measure of radiation)

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 include:

- *Microbial contaminants*, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- *Inorganic contaminants*, such as salts and metals, that 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* that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- *Organic chemical contaminants*, including synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- *Radioactive contaminants* that can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. EPA and the State Board prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health.

Tables 1, 2, 3, 4, 5, and 6 list all of the drinking water contaminants that were detected during the most recent sampling for the constituent. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The State Board allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though representative of the water quality, are more than one year old. Any violation of an AL, MCL, MRDL, or TT is asterisked. Additional information regarding the violation is provided later in this report.

TABLE 1 – SAMPLING RESULTS SHOWING THE DETECTION OF COLIFORM BACTERIA

Microbiological Contaminants (complete if bacteria detected)	**Highest No. of Detections**	**No. of months in violation**	**MCL**	**MCLG**	**Typical Source of Bacteria**
Total Coliform Bacteria (state Total Coliform Rule)	(In a mo.) 6	1	1 positive monthly sample	0	Naturally present in the environment

Fecal Coliform or *E. coli* (state Total Coliform Rule)	(In the year) 0	0	A routine sample and a repeat sample are total coliform positive, and one of these is also fecal coliform or *E. coli* positive		Human and animal fecal waste
E. coli (federal Revised Total Coliform Rule)	(In the year) 0	0	(a)	0	Human and animal fecal waste

(a) Routine and repeat samples are total coliform-positive and either is *E. coli*-positive or system fails to take repeat samples following *E. coli*-positive routine sample or system fails to analyze total coliform-positive repeat sample for *E. coli*.

TABLE 2 – SAMPLING RESULTS SHOWING THE DETECTION OF LEAD AND COPPER

Lead and Copper (complete if lead or copper detected in the last sample set)	**Sample Date**	**No. of samples collected**	**90th percentile level detected**	**No. sites exceeding AL**	**AL**	**PHG**	**Typical Source of Contaminant**
Lead (ppb)	09/18	20	0	0	15	0.2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper (ppm)	09/18	20	0.13	0	1.3	0.3	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

TABLE 3 – SAMPLING RESULTS FOR SODIUM AND HARDNESS

Chemical or Constituent (and reporting units)	**Sample Date**	**Level Detected (Average)**	**Range of Detections**	**MCL**	**PHG (MCLG)**	**Typical Source of Contaminant**
Sodium (ppm)	2018	21.6	16-31	None	None	Salt present in the water and is generally naturally occurring
Hardness (ppm)	2018	101.43	81-134	None	None	Sum of polyvalent cations present in the water, generally magnesium and calcium, and are usually naturally occurring

TABLE 4 – DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD

Chemical or Constituent (and reporting units)	**Sample Date**	**Level Detected (Average)**	**Range of Detections**	**MCL [MRDL]**	**PHG (MCLG) [MRDLG]**	**Typical Source of Contaminant**
1,2,3 Trichoproprane (ng/L)	2018	ND	ND	5	0.7	A chlorinated hydrocarbon with high chemical stability; It is a manmade chemical that is found at industrial or hazardous waste sites
Fluoride	2018	0.75	0.65-0.93	2	1	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Chlorine (distribution system) (ppm)	2018	0.93	0-1.6	4	4	Drinking water disinfectant added for treatment
Total Trihalomethanes TTHM (ppb)	08/18	22.98	22.98	80	N/A	By-product of drinking water chlorination
Haloacetic Acids HAA5 (ppb)	08/18	9.9	9.9	60	N/A	By-product of drinking water chlorination
Hexavalent Chromium (ppb)	2017, 2018	1.1	0-1.5	10	0.02	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits

Inorganic Contaminants						
Aluminum (mg/L)	2018	0	0	1	0.6	Erosion of natural deposits; residue from some surface water treatment processes
Antimony (ug/L)	2018	0	0	6	1	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic (ug/L)	2018	0	0	10	0.004	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium (ppm)	2018	0.014	0-0.1	1	2	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Beryllium (ug/L)	2018	0	0	4	1	Discharge from metal refineries, coal-burning factories, and electrical, aerospace, and defense industries
Cadmium (ug/L)	2018	0	0	5	0.04	Internal corrosion of galvanized pipes; erosion of natural deposits; discharge from electroplating and industrial chemical factories, and metal refineries; runoff from waste batteries and paints
Chromium (Total) (ug/L)	2018	0	0	50	(100)	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Mercury (Inorganic) (ug/L)	2018	0	0	2	1.2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills and cropland
Nickel (ug/L)	2018	0	0	100	12	Erosion of natural deposits; discharge from metal factories
Nitrate (NO_3) (ppm)	2018	0.50	0.4-1.1	45	45	Runoff/leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Nitrite (as nitrogen, N) (ppm)	2018	0.40	0.40	1	1	Infants below the age of six months who drink water containing nitrite in excess of the MCL may quickly become seriously ill and, if untreated, may die; Symptoms include shortness of breath and blueness of the skin
Perchlorate (ug/L)	2016. 2017	0	0	6	1	Perchlorate is an inorganic chemical used in solid rocket propellant, fireworks, explosives, flares, matches, and a variety of industries. It usually gets into drinking water as a result of environmental contamination from historic aerospace or other industrial operations that used or use, store, or dispose of perchlorate and its salts.
Selenium (ppb)	2018	0	0	50	30	Discharge from petroleum, glass, and metal refineries; erosion of natural deposits; discharge from mines and chemical manufacturers; runoff from livestock lots (feed additive)

Thallium (ug/L)	2018	0	0			
Radium 228 (pCi/L)	2017	0.072	0-0.242	5	(0)	Erosion of natural deposits
Gross Alpha Particle Activity (pCi/L)	2013, 2018	0.45	0-0.472	15	(0)	Erosion of natural deposits
Volatile Organic Contaminants						
Benzene (ug/L)	2018	<0.5	<0.5	1	0.15	Discharge from plastics, dyes and nylon factories; leaching from gas storage tanks and landfills
Carbon tetrachloride (ng/L)	2018	<500	<500	500	100	Discharge from chemical plants and other industrial activities
1,2-Dichlorobenzene (ug/L)	2018	<0.5	<0.5	600	600	Discharge from industrial chemical factories
1,4-Dichlorobenzene (ug/L)	2018	<0.5	<0.5	5	6	Discharge from industrial chemical factories
1,1-Dichloroethane (ug/L)	2018	<0.5	<0.5	5	3	Extraction and degreasing solvent; used in the manufacture of pharmaceuticals, stone, clay, and glass products; fumigant
1,2-Dichloroethane (ng/L)	2018	<0.5	<0.5	500	400	Discharge from industrial chemical factories
1,1-Dichloroethylene (ug/L)	2018	<0.5	<0.5	6	10	Discharge from industrial chemical factories
cis-1,2-Dichloroethylene (ug/L)	2018	<0.5	<0.5	6	100	Discharge from industrial chemical factories; major biodegradation byproduct of TCE and PCE groundwater contamination
trans-1,2-Dichloroethylene (ug/L)	2018	<0.5	<0.5	10	60	Discharge from industrial chemical factories; minor biodegradation byproduct of TCE and PCE groundwater contamination
Dichloromethane (ug/L)	2018	<0.5	<0.5	5	4	Discharge from pharmaceutical and chemical factories; insecticide
1,2-Dichloropropane (ug/L)	2018	<0.5	<0.5	5	0.5	Discharge from industrial chemical factories; primary component of some fumigants
1,3-Dichloropropene (ng/L)	2018	<500	<500	500	200	Runoff/leaching from nematocide used on croplands
Ethylbenzene (ug/L)	2018	<0.5	<0.5	300	300	Discharge from petroleum refineries; industrial chemical factories
Methyl-*tert*-butyl ether (ug/L)	2018	<3.0	<3.0	13	13	Leaking underground storage tanks; discharges from petroleum and chemical factories

Monochlorobenzene (ug/L)	2018	<0.5	<0.5	70	70	Discharge from industrial and agricultural chemical factories and dry cleaning facilities
Styrene (ug/L)	2018	<0.5	<0.5	100	0.5	Discharge from rubber and plastic factories; leaching from landfills
1,1,2,2-Tetrachloroethane (ug/L)	2018	<0.5	<0.5	1	0.1	Discharge from industrial and agricultural chemical factories; solvent used in production of TCE, pesticides, varnish and lacquers
Tetrachloroethylene (PCE) (ug/L)	2018	<0.5	<0.5	5	0.06	Discharge from factories, dry cleaners, and auto shops (metal degreaser)
1,2,4-Trichlorobenzene (ug/L)	2018	<0.5	<0.5	5	5	Discharge from textile-finishing factories
1,1,1-Trichloroethane (ug/L)	2018	<0.5	<0.5	200	1000	Discharge from metal degreasing sites and other factories; manufacture of food wrappings
1,1,2-Trichloroethane (ug/L)	2018	<0.5	<0.5	5	0.3	Discharge from industrial chemical factories
Trichloroethylene (TCE) (ug/L)	2018	<0.5	<0.5	5	1.7	Discharge from metal degreasing sites and other factories
Toluene (ug/L)	2018	<0.5	<0.5	150	150	Discharge from petroleum and chemical factories; underground gas tank leaks
Trichlorofluoromethane (ug/L)	2018	<5.0	<5.0	150	1300	Discharge from industrial factories; degreasing solvent; propellant and refrigerant
1,1,2-Trichloro-1,2,2-trifluoroethane (ug/L)	2018	<0.5	<0.5	1.2	4	Discharge from metal degreasing sites and other factories; dry cleaning solvent; refrigerant
Vinyl chloride (ng/L)	2018	<500	<500	500	50	Leaching from PVC piping; discharge from plastics factories; biodegradation byproduct of TCE and PCE groundwater contamination
Xylenes (ug/L)				1.750	1.8	Discharge from petroleum and chemical factories; fuel solvent

TABLE 5 – DETECTION OF CONTAMINANTS WITH A SECONDARY DRINKING WATER STANDARD

Chemical or Constituent (and reporting units)	**Sample Date**	**Level Detected Average**	**Range of Detections**	**MCL**	**PHG (MCLG)**	**Typical Source of Contaminant**
Chloride (ppm)	2018	36.29	16-69	500	None	Runoff/leaching from natural deposits
Sulfate (ppm)	2018	4.87	0-10	500	N/A	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids	2018	218.57	190-250	1500	N/A	Runoff/leaching from natural deposits

Specific Conductance (E.C.) (umhos/cm)	2018	317.14	250-400	2200	N/A	Runoff/leaching from natural deposits
Turbidity	2011, 2014, 2015	0.48	0.2-0.9	5	N/A	Soil runoff
Manganese (ppb)	2018	120.71	0-360	50	N/A	Leaching from natural deposits

TABLE 6 – DETECTION OF UNREGULATED CONTAMINANTS

Chemical or Constituent (and reporting units)	**Sample Date**	**Level Detected**	**Range of Detections**	**Notification Level**	**Health Effects Language**

N/A- No detection of unregulated contaminants for 2018.

Note: Beale tested the 7 source wells on 11 Aug 2016 for Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA) which are fluoridated organic chemicals that are part of a larger group of chemicals referred to as perfluoroalkyl substances. These chemicals are used to make carpets, clothing, fabrics for furniture, paper packing for food, and other material that are resistant to water, grease or stains. These studies indicate that exposure to PFOA and PFOS over certain levels may result in adverse health effects, including developmental effects to fetuses during pregnancy or to breastfed infants, cancer, liver effects, immune effects, thyroid effects and other effects.
The results for all 7 wells were Non-Detect.

** Any violation of an MCL, MRDL, or TT is asterisked. Additional information regarding the violation is provided later in this report.*

Additional General Information on Drinking Water

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 U.S. EPA's Safe Drinking Water Hotline (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.

USEPA/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 (1-800-426-4791).

Lead-Specific Language for Community Water Systems: 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. Beale AFB 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. [Optional: If you do so, you may wish to collect the flushed water and reuse it for another beneficial purpose, such as watering plants.] 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 (1-800-426-4701) or at http://www.epa.gov/lead.

Summary Information for Violation of a MCL, MRDL, AL, TT, or Monitoring and Reporting Requirement

VIOLATION OF A MCL, MRDL, AL, TT, OR MONITORING AND REPORTING REQUIREMENT				
Violation	**Explanation**	**Duration**	**Actions Taken to Correct the Violation**	**Health Effects Language**
(MCL TCR), Monthly	There was a positive reported for total coliform but negative for E. Coli on one of the compliance points. The positive was from the sample conducted on 09-04-2018. BE took a repeat sample on 09-07-2018 on the compliance point but failed to take a bacti sample from the upstream and downstream of that compliance point.	09-01-2018 to 09-30-2018	Although the repeat conducted on 09-07-2018 came back clean, BE conducted another repeat sample on the compliance point, upstream, and downstream on 09-27-2018. All samples came back negative for both total coliform and E. Coli.	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.
1,2,3-Tricholopropance (1,2,3-TCP), Quarterly	Wells 1 & 2 were sampled during the 3rd quarter, 07-03-2018, however, the samples were analyzed as volatile organic compound.	07-01-2018 to 09-30-2018	BE is required to resample Wells 1 & 2 during the 3rd quarter of 2019 in order to close out this violation.	1,2,3-TCP is a chlorinated hydrocarbon with high chemical stability. It is a manmade chemical that is found at industrial or hazardous waste sites and is reasonably anticipated to be a human carcinogen and probably carcinogenic to humans based on evidence of carcinogenicity in experimental animals.

For Water Systems Providing Ground Water as a Source of Drinking Water

TABLE 7 – SAMPLING RESULTS SHOWING FECAL INDICATOR-POSITIVE GROUND WATER SOURCE SAMPLES					
Microbiological Contaminants (complete if fecal-indicator detected)	**Total No. of Detections**	**Sample Dates**	**MCL [MRDL]**	**PHG (MCLG) [MRDLG]**	**Typical Source of Contaminant**
E. coli	(In the year) 0	2018	0	(0)	Human and animal fecal waste
Enterococci	(In the year) 0	2018	TT	n/a	Human and animal fecal waste
Coliphage	(In the year) 0	2018	TT	n/a	Human and animal fecal waste

Summary Information for Fecal Indicator-Positive Ground Water Source Samples, Uncorrected Significant Deficiencies, or Ground Water TT

SPECIAL NOTICE OF FECAL INDICATOR-POSITIVE GROUND WATER SOURCE SAMPLE
N/A-No special notices were required for positive fecal indicators in ground water samples in 2018.

SPECIAL NOTICE FOR UNCORRECTED SIGNIFICANT DEFICIENCIES
N/A- No special notices were required for uncorrected significant deficiencies in 2018.

VIOLATION OF GROUND WATER TT				
TT Violation	**Explanation**	**Duration**	**Actions Taken to Correct the Violation**	**Health Effects Language**
N/A	**N/A**	**N/A**	**N/A**	**N/A**

Summary Information for Violation of a Surface Water TT

VIOLATION OF A SURFACE WATER TT				
TT Violation	**Explanation**	**Duration**	**Actions Taken to Correct the Violation**	**Health Effects Language**
N/A	**N/A**	**N/A**	**N/A**	**N/A**

Summary Information for Operating Under a Variance or Exemption

N/A- There have been no violations of a surface water TT in 2018.

Summary Information for Federal Revised Total Coliform Rule
Level 1 and Level 2 Assessment Requirements

Level 1 or Level 2 Assessment Requirement not Due to an *E. coli* MCL Violation

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We did not find coliforms indicating the need to look for potential problems in water treatment or distribution.

During the past year, we were required to conduct 0 Level 1 assessment(s) and 0 Level 1 assessment(s) were completed. We were not required to take any corrective actions.

During the past year, 0 Level 2 assessments were required to be completed for our water system. We were not required to take any corrective actions.

Level 2 Assessment Requirement Due to an *E. coli* MCL Violation

E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely-compromised immune systems. We did not find *E. coli* bacteria indicating the need to look for potential problems in water treatment or distribution.

We were not required to complete a Level 2 assessment because we did not find *E. coli* in our water system. We were not required to take any corrective actions.