



2016 Drinking Water Quality Annual Consumer Report

Eielson Air Force Base Alaska

Introduction

Once again, Eielson AFB is pleased to present this year's annual drinking water quality report. **The data used for this report was collected in calendar year 2015.**

This report is designed to inform you about the high quality water Eielson AFB delivers to you every day.

Under the "Consumer Confidence Reporting Rule" of the federal Safe Drinking Water Act (SDWA), community water systems are required to report this water quality information to the consuming public.

Presented in this report is information on the source of our water, the contaminant sampling frequency and the results for each contaminant found above the laboratory detection limit.

We continually monitor the drinking water for contaminants in accordance with federal, state, and Air Force requirements.

We are proud to report that the water provided by Eielson Air Force Base meets or exceeds established water quality standards set by the Environmental Protection Agency (EPA) and the Alaska Department of Environmental Conservation.

Water Source Information

Your Eielson AFB main distribution system utilizes ground water from the Tanana Valley Alluvial Aquifer. The public water system for Eielson AFB is a community water system consisting of six source intakes. The intakes for this Public Water System ID (PWSID) are groundwater wells. The ground water is delivered to the Eielson AFB Water Treatment Plant via water production wells. At the Water Treatment Plant, the ground water is treated, disinfected, and prepared for distribution. The treated water is then sent to water faucets on Eielson AFB via a network of water distribution lines. A few outlying areas not connected to the base distribution system receive delivered water stored in tanks.

The Alaska Department of Environmental Conservation (ADEC) Source Water Assessment program has been implemented to make public water system operators, as well as the public it serves, aware of potential sources of contamination in the vicinity of our wells that may impact the water. The assessment was conducted in 2004 and in 2010, an additional survey was conducted for a new well at Eielson AFB. The assessment included a vulnerability ranking based on a prioritized list of the possible contaminating activities identified. The top source water (well water) vulnerability ranking include: industrial activities, sewer lines, airfield, ADEC-recognized contaminated sites, underground fuel storage tanks, highways and roads, power plant, and fire training facilities. Due to these potential sources of contamination in the area, Eielson AFB received a medium to high vulnerability rating. While ADEC has assessed our water supplies to have these potential vulnerabilities, you can see by the detected contaminants table on page three, we do not show any contamination that exceeds regulatory limits for 2015.

The Source Water Assessment for Eielson AFB is available for review by contacting the 354th Medical Group, Bioenvironmental Engineering Flight at 377-6687.

Water Quality

Eielson AFB routinely takes weekly water quality samples as well as additional samples during every line break. In addition to the required testing, Eielson takes extra samples from both the distribution and the source water to ensure the safety of the water we supply to our customers.

Be assured that Bioenvironmental Engineering, Water Treatment Plant, and the Utilities Maintenance personnel make every effort to ensure the water provided to Eielson is safe for consumption and that the installation is notified should water quality deteriorate.





Water Source Information Continued

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, 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 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, urban stormwater runoff, and residential uses.
- ◆ Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, can also come from gas stations, urban stormwater runoff, and septic systems.
- ◆ Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.
- ◆ Lead, which may come from corrosion of household plumbing systems or erosion of natural deposits. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. 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 www.epa.gov/safewater/lead.
- ◆ 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.

In order to ensure tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration 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 at 1-800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk for infections. These people should seek advice about drinking water from their health care providers.

The EPA/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

Monitoring Your Drinking Water



Detected Contaminants Results Table

The following table presents the results of our water monitoring for 2015.

We listed only those contaminants that the laboratory actually detected; all of the contaminants are below the established Maximum Contaminant Level (MCL) and the Maximum Contaminant Level Goal (MCLG).

The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Therefore, some of our reported data is more than one year old.

Contaminants & Monitoring Frequency

At Eielson AFB, Bioenvironmental Engineering and the Water Treatment Plant monitor for more than 80 contaminants using EPA-approved methods.

These contaminants, grouped by chemical type and monitoring frequency, are listed in the table below.

Contaminant Group	Monitoring Frequency
Disinfectant Residual	Daily at Water Plant
Turbidity	Daily at Water Plant
Fluoride	Daily at Water Plant; Weekly throughout water system; Every 9 years by Laboratory
Coliform Bacteria	Weekly throughout water system
Volatile Organic Chemicals (VOC)	Quarterly for 4 contaminants Annually for all 62 contaminants
Inorganic Chemicals	Every 9 years (Next sample due 2018)
Trihalomethanes (TTHMs)	Quarterly
Haloacetic Acids (HAA)	Quarterly
Arsenic	Every 9 years (Next sample due 2021)
Nitrate	Annually
Nitrite	One-time sample (Collected 20 Sep 94)
Pesticides & Other Organic Chemicals	Waiver until 2014-2016
Radionuclides	Every 9 years (Next sample due 2021)
Lead and Copper	Every 3 years (Next sample due 2016)

Contaminant	Violation Y/N	Sample Date	Highest Level Detected	Range Detected/ RAA/ LRA	Unit Measure	MCL	MCLG	Major Sources in Drinking Water
Disinfectants								
Chlorine Residual Distribution Lines	N	2015	1.94	0.0-1.94	ppm	MRDL 4	MRDLG 4	Water additive used to control microbes
Organic Contaminants								
Total Trihalomethanes Compliance based on the Locational Running Annual Average (LRAA) for last 4 quarters sampled								
Bldg 1346	N	2015 Samples taken Quarterly	92	62-92 LRAA 76	ppb	80	N/A	By-product of drinking water disinfection
Bldg 3349	N		30	16-30 LRAA 26	ppb	60	N/A	
Haloacetic Acids Compliance based on the Locational Running Annual Average (LRAA) for last 4 quarters sampled								
Bldg 1346	N	2015 Samples taken Quarterly	30	13-30 LRAA 16	ppb	80	N/A	By-product of drinking water disinfection
Bldg 3349	N		37	20-37 LRAA 29	ppb	60	N/A	
Inorganic Contaminants								
Nitrate WTP	N	1/13/15	0.23	N/A	ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Barium	N	7/21/09	0.05	N/A	ppm	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride (WTP)	N	7/21/09	0.7	N/A				Erosion of natural deposits;
Fluoride From Distribution Lines	N	2015	0.91	0.39-0.91 0.73 RAA	ppm	4	4	Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Lead and Copper—Tested at customer’s taps								
Copper 90 th percentile of 24 samples taken	N	6/19/13	1.27 (90%) (2 of 24 over AL)	N/A	ppm	AL 1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead 90 th percentile of 24 samples taken	N	6/19/13	5.4 (90%) (0 of 24 over AL)	N/A	ppb	AL 15	0	Corrosion of household plumbing systems; erosion of natural deposits
Volatile Organic Contaminants								
Cis-1,2 Dichloroethene WTP, Well B	N	1/13/15	0.70	0.66-0.70	ppb	5	0	Discharge from industrial chemical factories
Total Trihalomethanes WTP	N	1/13/15	1.7	N/A	ppb	80	N/A	By-product of drinking water chlorination
Trichloroethene Well B	N	1/13/15	0.24	N/A	ppb	5	0	Discharge from metal degreasing sites and other factories
Radiological Contaminants								
Gross Alpha	N	2012	0.7	N/A	pCi/L	15	0	Erosion of Natural Deposits
Beta Particle & Photon Emitters	N	2012	2.2	N/A	pCi/L	50*	0	Decay of natural and manmade deposits
Combined Radium 226/228	N	2012	-0.06	N/A	pCi/L	5	0	Erosion of natural deposits

* The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.



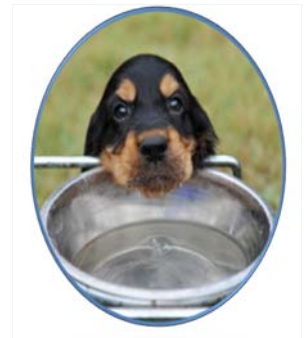
Additional Information About Your Water

In the previous CCR, we informed you Bioenvironmental Engineering was coordinating with the EPA and ADEC to investigate Perfluorinated Compounds (PFCs) within our base drinking water. Since we have reached the new year, wing leadership wishes to provide you updates to this event.

After sampling in February 2015, Eielson Air Force Base identified PFCs in excess of provisional health advisory (PHA) levels in three of Eielson's six distribution system drinking water wells and below PHA levels in the other three wells. 354th CES immediately took the wells with PFC concentrations exceeding PHA levels out of service. Since then, quarterly sampling has validated your drinking water has remained below the EPA's PHA.

In April 2016, Eielson upgraded our water treatment plant with granulated activated carbon, capable of removing PFCs from base drinking water. We will continue to monitor PFC concentrations quarterly through 2016.

2015 Eielson AFB Water Treatment Plant Quarterly PFOA and PFOS Results						
Parameter	Provisional Health Advisory (ppb)	1 st Quarter Level at WTP (ppb)	2 nd Quarter Level at WTP (ppb)	3 rd Quarter Level at WTP (ppb)	4 th Quarter Level at WTP (ppb)	Annual Average Level Detected at WTP (ppb)
Perfluorooctanoic acid (PFOA)	0.4	0.1	0.0098	0.025	0.041	0.03
Perfluorooctanesulfonate (PFOS)	0.2	0.35	0.062	0.084	0.15	0.14



“The safety and well-being of each one of our Iceman Team members has always been our top priority. Without ensuring the safety of our team, we could not effectively complete the mission,” said Col. Michael Winkler, the 354th Fighter Wing commander. “We will continue to monitor the situation and ensure on-base drinking water continues to meet applicable federal and state standards.”

Acronyms & Terms Used In This Report

Below is a listing of acronyms and terms (with explanations) used in this Drinking Water Quality Report.

EPA	Environmental Protection Agency		
ADEC	Alaska Department of Environmental Conservation	Level Found	Laboratory analytical result for a contaminant; this value is evaluated against an MCL or AL to determine compliance.
SDWA	Safe Drinking Water Act; the federal law which sets forth drinking water regulations.	90th Percentile	90% of all sample results fall below this level (24 sites throughout base housing are tested for lead and copper). This level is compared to the AL for compliance.
MCL	Maximum Contaminant Level; the highest level of a contaminant allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.	ppm or mg/L	Parts per million or milligrams per liter. One part per million corresponds to one minute in two years.
MCLG	Maximum Contaminant Level Goal; the level of a contaminant in drinking water below which there is no known or expected health risk. MCLGs allow for a margin of safety.	ppb or ug/L	Parts per billion or micrograms per liter. One part per billion corresponds to one minute in 2,000 years.
AL	Action Level; the concentration of a contaminant that, if exceeded, triggers treatment or other requirements a water system must follow.	pCi/L	Picocuries Per Liter
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.	LRA	Locational Running Average
MRDLG	Maximum Residual Disinfectant 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 contamination.	RAA	Running Annual Average
		WTP	Water Treatment Plant



Public Involvement

Consumers who have questions about this report or concerns over their drinking water may contact **Public Affairs at 377-2116**. Based on public interest, this report may be the topic of a future 354 FW Town Hall Meeting to provide an opportunity for public participation in decisions that affect drinking water quality.

Contact Public Affairs for more information. An electronic copy of this report is available on the Eielson Web Site.

Water Conservation Tips for Consumers

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference - try one today and soon it will become second nature.

- ◆ Take short showers. A 5 minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- ◆ Shut off water while brushing your teeth, washing your hair and shaving, and save up to 500 gallons a month.
- ◆ Use a water-efficient showerhead. They are inexpensive, easy to install, and can save you up to 750 gallons a month.
- ◆ Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- ◆ Water plants only when necessary.
- ◆ Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.
- ◆ Teach your kids about water conservation to ensure future generations use water wisely. **Make it a family effort!**
- ◆ Visit www.epa.gov/watersense for more information.

Did You Know?

Water is also used to cool the power plants that generate the electricity we use every day. So every time your television, computer, or lights use energy, water is being used up too. In fact, it takes 3,000 to 6,000 gallons of water to power one light bulb left on 12 hours a day for a year. Turn out the lights and save both water and energy!

KIDS!



There are 18 hidden vertical, horizontal, and backwards words related to water.

How many words can you find?



D B Z I S X N C O N S E R V E F S D
 P R A W M D D C J L Q B R U J C K R
 B Y I O N T P D S P L A S H B D U I
 V M Y P K E S Y T O I U H G A R G N
 A C N B M W A V E T Y W O H C I W K
 H K O I G L O S D J Z S W E Q V P T
 R F E S P R I N K L E R E S M E Q S
 E J A M L V C M N U Q B R T V R G R
 I B O T T L E B A O S V F J O Y H A
 C X I H G P O X R C L O U D S L A I
 A P M Z C F Z R W E I Y P R N O P N
 L I Q U I D Q C P A F Q T X L O E K
 G D N L J B A M Y N A E B I W P R A

SPRINKLER
 DRINK
 ICE
 OCEAN
 RIVER
 BOTTLE

WAVE
 CONSERVE
 DRIP
 POOL
 CLOUDS
 SWIM

WET
 SHOWER
 GLACIER
 LIQUID
 RAIN
 SPLASH