

**2018**  
**Annual Consumer Confidence Report on the Quality of**  
**Naval Base Kitsap Bangor Drinking Water**

*This is an annual report on the quality of water delivered by the drinking water system at Naval Base Kitsap Bangor. Presented in this report is information on the source of our water, its constituents, and the health risks associated with any contaminants. Please read on for a full explanation of the quality of our water.*

***Our water is safe to drink.***

## **Source of our Water**

The Naval Base Kitsap Bangor water system provides drinking water to over 15,000 people, drawing water from the Sea Level Aquifer through four groundwater source wells S01, S02, S04 & S09 located on base. S09 was not used in 2017 after March 7<sup>th</sup> due to required maintenance. The depths of the wells range from 300 to 500 feet below the ground surface. Groundwater wells are safeguarded through wellhead protection efforts. All water facilities are monitored and patrolled. Access to the water system within the Naval Base Kitsap Bangor boundaries is secured and limited to water supply activities. Additionally, unlike surface water sources, our aquifer is not exposed to air and is not subject to direct pollution and contamination. The aquifer is recharged by rainfall that falls on the Kitsap Peninsula and slowly percolates through the ground.

The water system is operated and maintained by experienced personnel licensed by the state of Washington. Treatment of the installation water currently consists of:

- 💧 Chlorination for disinfection to control microbes that could be present in the water
- 💧 Addition of orthophosphate to reduce corrosion of lead and copper in plumbing

## **Information from EPA**

The sources of drinking water include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land and through the ground, it dissolves naturally occurring minerals, and in some cases, radioactive material. It can also pick up substances resulting from the presence of animals or from human activity. These substances are referred to as contaminants by the EPA.

Contaminants that may be present in source water include:

- a. Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;
- b. 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;
- c. Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;
- d. 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;
- e. Radioactive contaminants, which 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 EPA and the WDOH prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) and Washington State Department of Agriculture (WDOA) 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 800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

**2018**  
**Annual Consumer Confidence Report on the Quality of**  
**Naval Base Kitsap Bangor Drinking Water**

### **Secondary Drinking Water Contaminates**

The EPA has established National Secondary Drinking Water Regulations (NSDWRs) that set water quality standards for 15 contaminants, including Manganese. The EPA does not enforce these "secondary maximum contaminant levels" (SMCLs). They are established primarily as guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, and odor. These contaminants are only considered to have potential health implications at considerably high concentrations. If SMCLs are exceeded, Naval Base Kitsap consults with the Washington State Department of Health (WDOH) to determine if any actions are required.

In 2015, samples exceeded the SMCL for manganese. Manganese is a common element. Water percolating through soil can dissolve minerals containing manganese and hold them in solution, carrying them into our wells. The WDOH was notified, and a series of investigative samples in the distribution system were accomplished with all sample results less than the SMCL. The WDOH prescribed no further action.

### **Household Cross Connection Protection**

A cross connection happens when your drinking water plumbing is connected or in contact with a non-drinking water system such as a lawn sprayer, soap dispenser, sprinkler system, swimming pool, irrigation system, or water heating and cooling system. When water flows back from the non-drinking water system into your drinking water plumbing system, your drinking water becomes contaminated. Signs of contamination include discolored water and unusual smells. See attached pamphlet titled *Help Protect Your Drinking Water from Contamination* for more information on how to protect your drinking water from cross connections.

### **Additional Information for Lead**

In Washington State, lead in drinking water comes primarily from materials and components used in household plumbing. The more time water has been sitting in pipes, the more dissolved metals, such as lead, it may contain. Elevated levels of lead can cause serious health problems, especially in pregnant women and young children.

To help reduce potential exposure to lead: for any drinking water tap that has not been used for 6 hours or more, flush water through the tap for thirty seconds to two minutes, or until the water is noticeably colder, before using for drinking or cooking. You can use the flushed water for watering plants, washing dishes, or general cleaning. Only use water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water is likely to contain higher levels of lead. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water is available from EPA's Safe Drinking Water Hotline at 1-800-426-4791 or online at <http://www.epa.gov/safewater/lead>.

Compliance (Action Level) for lead and copper samples is based on a 90th percentile. This means that the concentration of lead and copper must be less than or equal to the action level in at least 90% of the samples collected. In other words, out of every 10 locations sampled, 9 were at or below the Action Level.

### **Water Quality Summary**

Your drinking water is regularly tested per applicable federal and state regulations for both the water source and the distribution system. The water system uses only EPA approved laboratory methods to analyze your drinking water. Samples are drawn from the sources and designated sample sites in the distribution system by licensed Water Shop personnel. The samples are then transported to an accredited laboratory where a full spectrum of water quality analyses are performed for the following listed parameters.

**2018**  
**Annual Consumer Confidence Report on the Quality of**  
**Naval Base Kitsap Bangor Drinking Water**

Sampling Schedule	
Parameter	Frequency
Coliform Monitoring <sup>1</sup>	Monthly
Lead and copper	Every 3 years
Asbestos	Every 9 years
Total Trihalomethane (TTHM)	Quarterly
Halo-Acetic Acids (HAA5)	Quarterly
Volatile Organic (VOC)	Every 6 years
Complete Inorganics (IOC) <sup>2</sup>	Every 9 years
Herbicides	Every 9 years
Pesticides	Every 9 years
Manganese <sup>3</sup>	Every 3 years
Iron <sup>3</sup>	Every 3 years <sup>4</sup>
Gross Alpha	Every 6 years <sup>5</sup>
Radium 228	Every 6 Years <sup>5</sup>
Residual Chlorine	Daily
Nitrates	Annually

<sup>1</sup> Parameters in this group include total coliform.

<sup>2</sup> Parameters in this group include metals, nitrate, and asbestos.

<sup>3</sup> Manganese and Iron are Secondary Inorganic Contaminates

<sup>4</sup> Source well S01 is sampled for iron every 3 years. All other source wells are sampled every 9 years as part of IOC sample.

<sup>5</sup> Gross Alpha and Radium 228 are sampled every 3 years at source well S04 and every 6 years for all other sources.

## Detected Contaminants

In order to ensure that tap water is safe to drink, EPA and WDOH prescribe 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 we detected during the 2018 calendar year. Please note that since source well S09 was inoperable for all of 2018 and was not used as a water source, no samples were taken from S09 in 2018.

Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the 2018 calendar year. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of the data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

**2018**  
**Annual Consumer Confidence Report on the Quality of**  
**Naval Base Kitsap Bangor Drinking Water**

Monitoring for Water Source S01							
Contaminates	Water Source	MCLG	MCL	Your Water	Sample Date	Violation	Typical Sources
Nitrate (ppm)	S01	10	10	< 0.10	2018	No	Runoff from fertilizer use; leaching from septic tank sewage; erosion of natural deposits.
Gross Alpha activity (pCi/L)	S01	0	15	1.8	2014	No	Erosion of natural deposits
Radium-228 (pCi/L)	S01	0	5	0.4	2014	No	Erosion of natural deposits
Sodium (ppm)	S01	20 <sup>1</sup>	None <sup>1</sup>	5.17	2012	No	Erosion of natural deposits
Copper (ppm)	S01	0	1.3	0.029	2012	No	Erosion of natural deposits
Lead (ppb)	S01	0	15	10	2012	No	Erosion of natural deposits
Arsenic (ppb)	S01	10	10	1	2012	No	Erosion of natural deposits

<sup>1</sup> Although no MCL is established for sodium, the EPA has established a recommended level of 20 ppm as a level of concern for those consumers that may be restricted for daily sodium intake in their diets.

Monitoring for Water Source S02							
Contaminates	Water Source	MCLG	MCL	Your Water	Sample Date	Violation	Typical Sources
Nitrate (ppm)	S02	10	10	0.14	2018	No	Runoff from fertilizer use; leaching from septic tank sewage; erosion of natural deposits.
Gross Alpha activity (pCi/L)	S02	0	15	1.3	2014	No	Erosion of natural deposits
Radium-228 (pCi/L)	S02	0	5	0.2	2014	No	Erosion of natural deposits
Sodium (ppm)	S02	20 <sup>1</sup>	None <sup>1</sup>	5.40	2013	No	Erosion of natural deposits
Lead (ppb)	S02	0	15	12	2013	No	Erosion of natural deposits

<sup>1</sup> Although no MCL is established for sodium, the EPA has established a recommended level of 20 ppm as a level of concern for those consumers that may be restricted for daily sodium intake in their diets.

**2018**  
**Annual Consumer Confidence Report on the Quality of**  
**Naval Base Kitsap Bangor Drinking Water**

Monitoring for Water Source S04							
Contaminates	Water Source	MCLG	MCL	Your Water	Sample Date	Violation	Typical Sources
Nitrate (ppm)	S04	10	10	< 0.10	2018	No	Runoff from fertilizer use; leaching from septic tank sewage; erosion of natural deposits.
Gross Alpha activity (pCi/L)	S04	0	15	0.5	2017	No	Erosion of natural deposits
Radium-228 (pCi/L)	S04	0	5	0.2	2017	No	Erosion of natural deposits
Sodium (ppm)	S04	20 <sup>1</sup>	None <sup>1</sup>	5.62	2012	No	Erosion of natural deposits
Lead (ppb)	S04	0	15	5	2012	No	Erosion of natural deposits

<sup>1</sup> Although no MCL is established for sodium, the EPA has established a recommended level of 20 ppm as a level of concern for those consumers that may be restricted for daily sodium intake in their diets.

Monitoring for Water Source S09							
Contaminates	Water Source	MCLG	MCL	Your Water	Sample Date	Violation	Typical Sources
Nitrate (ppm)	S09	10	10	0.14	2016	No	Runoff from fertilizer use; leaching from septic tank sewage; erosion of natural deposits.
Gross Alpha activity (pCi/L)	S09	0	15	0.2	2016	No	Erosion of natural deposits
Radium-228 (pCi/L)	S09	0	5	0.6	2014	No	Erosion of natural deposits

Distribution System Monitoring								
Contaminates	MCLG	MCL	Your Water	Range		Sample Date	Violation	Typical Sources
				Low	High			
Volatile Organic Contaminants								
Haloacetic Acids (HAA) (ppb)	N/A	60	0.6 <sup>1</sup>	0	2.4	2018	No	By-product of drinking water disinfection
Total Trihalomethane (TTHM) (ppb)	N/A	80	5.6 <sup>1</sup>	0	7.1	2018	No	By-product of drinking water disinfection
Asbestos								
Asbestos (Million Fibers/L) <sup>2</sup>	0	7	0.13	0.13	0.13	2010	No	Corrosion of plumbing systems

<sup>1</sup> LRAA for the 2018 calendar year at sample location with highest LRAA.

<sup>2</sup> Fibers longer 10 µm

**2018**  
**Annual Consumer Confidence Report on the Quality of**  
**Naval Base Kitsap Bangor Drinking Water**

Distribution System Monitoring							
Contaminates	MCLG	AL	Your Water (90 <sup>th</sup> %)	Sample Date	# of Samples Exceeding AL	Violation	Typical Sources
<b>Inorganic Contaminates</b>							
Lead (ppb)	0	15	3 <sup>1</sup>	2018	1 <sup>2</sup>	No	Corrosion of household plumbing systems; erosion of natural deposits.
Copper (ppm)	0	1.3	0.08 <sup>1</sup>	2015	0	No	Corrosion of household plumbing systems; erosion of natural deposits.

<sup>1</sup> This is the 90th% value from the most recent testing, which is below the AL showing our system complies with the Lead & Copper Rule.

<sup>2</sup> Sample exceeding the AL occurred on 6/7/2018 at 4102A Michigan Drive with a value of 18 ppb.

Secondary Drinking Water Contaminate Monitoring for Water Source S01							
Contaminates	Source	MCLG	SMCL	Your Water	Sample Date	Exceedance	Typical Sources
Manganese (ppb)	S01	50	50	38	2012	No	Erosion of natural deposits
Iron (ppb)	S01	300	300	262	2012	No	Erosion of natural deposits
Chloride (ppm)	S01	250	250	2.09	2012	No	Erosion of natural deposits
Zinc (ppm)	S01	5	5	0.35	2012	No	Erosion of natural deposits
Conductivity (µS/cm)	S01	700	700	146	2012	No	Erosion of natural deposits

Secondary Drinking Water Contaminate Monitoring for Water Source S02							
Contaminates	Water Source	MCLG	SMCL	Your Water	Sample Date	Exceedance	Typical Sources
Manganese (ppb)	S02	50	50	13	2013	No	Erosion of natural deposits
Chloride (ppm)	S02	250	250	2.28	2013	No	Erosion of natural deposits
Conductivity (µS/cm)	S02	700	700	155	2013	No	Erosion of natural deposits

**2018**  
**Annual Consumer Confidence Report on the Quality of**  
**Naval Base Kitsap Bangor Drinking Water**

Secondary Drinking Water Contaminate Monitoring for Water Source S04							
Contaminates	Water Source	MCLG	SMCL	Your Water	Sample Date	Exceedance	Typical Sources
Manganese (ppb)	S04	50	50	70	2015	Yes <sup>1</sup>	Erosion of natural deposits
Iron (ppb)	S04	300	300	165	2012	No	Erosion of natural deposits
Chloride (ppm)	S04	250	250	2.17	2012	No	Erosion of natural deposits
Conductivity (µS/cm)	S04	700	700	158	2012	No	Erosion of natural deposits

<sup>1</sup> This is an exceedance of the SMCL, which means the limits are set primarily to protect the aesthetic qualities of drinking water and are not federally enforced. The WA Department of Health (WDOH) was informed. Per WDOH instruction, investigative samples within the distribution system were taken which all showed concentrations below the SMCL. No further actions were recommended by the WDOH. Manganese is a common element. Water percolating through soil can dissolve minerals containing manganese and hold them in solution, carrying them into our wells.

Secondary Drinking Water Contaminate Monitoring for Water Source S09							
Contaminates	Water Source	MCLG	SMCL	Your Water	Sample Date	Exceedance	Typical Sources
Manganese (ppb)	S09	50	50	83	2015	Yes <sup>1</sup>	Erosion of natural deposits

<sup>1</sup> This is an exceedance of the SMCL, which means the limits are set primarily to protect the aesthetic qualities of drinking water and are not federally enforced. The WA Department of Health (WDOH) was informed. Per WDOH instruction, investigative samples within the distribution system were taken which all showed concentrations below the SMCL. No further actions were recommended by the WDOH. Manganese is a common element. Water percolating through soil can dissolve minerals containing manganese and hold them in solution, carrying them into our wells.

**2018**  
**Annual Consumer Confidence Report on the Quality of**  
**Naval Base Kitsap Bangor Drinking Water**

## **Definitions and Abbreviations**

**AL** (Action Level) – The concentration of a contaminant, which, if exceeded, triggers treatment techniques or other requirements, which must be followed.

**Level Detected** – Laboratory analytical result for a contaminant; this value is evaluated against an MCL or AL to determine compliance.

**LRAA** – Locational Running Annual Average

**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. Under the Safe Drinking Water Act, the EPA establishes these MCLs for compliance purposes.

**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.

**SMCL** (Secondary Maximum Contaminant Level) – These standards are developed primarily to protect the aesthetic qualities of drinking water but are not federally enforced. Exceeding an SMCL requires notification to the state Department of Health.

**N/A** – Not Applicable

**ND** – Not Detected. The compound was not detected above the Lab's Method Detection Limit

**ppb** – 1 part per billion (equivalent to one penny in \$10,000,000).

**ppm** – 1 part per million (equivalent to one penny in \$10,000).

**pCi/L** – Picocuries per liter. A measurement of radioactivity in water.

**µS/cm** – micro-Siemens per centimeter. A standard measurement of conductivity in water.

**Range** – Represents the end values recorded from the highest and lowest analytical results of a reported contaminant.

## **Public Involvement**

Drinking water system information may be obtained by contacting the Naval Base Kitsap Public Affairs Office, at 360-627-4031.



## Common Household Hazards

### *Chemical Spray Applicators*

The chemicals used on your lawn and garden can be toxic or fatal if ingested. These chemicals include pesticides, herbicides, and fertilizers. Even strong cleaning chemicals sprayed on cars, house siding, etc., may cause health problems if ingested.

### *Submerged Hoses*

Water held in pools, ponds or other vats open to the air and exposed to humans or animals may contain microbiological contaminants. Hoses submerged in buckets or containers can act as a conduit for contaminants under backflow conditions.

### *Underground Lawn Irrigation Systems*

Underground irrigation systems often have puddles of standing water around the ground-level sprinkler heads. The sprinkler heads **are not** designed to be drip-tight under backflow conditions. The puddles of water may contain microbiological contaminants, such as excrement from animals or chemical residue from fertilizer and herbicides sprayed on the lawn.



For further  
information  
contact your  
local water  
purveyor or the  
PNWS/AWWA  
Cross-Connection  
Control Committee  
through the  
PNWS office at  
(877) 767-2992  
or on the web at  
[www.pnws-awwa.org](http://www.pnws-awwa.org)

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Help protect your  
**Drinking Water**  
from  
**Contamination**

## **Household Hazards**



American Water Works Association  
Pacific Northwest Section

## How Contamination Occurs

Water normally flows in one direction, from the public water system through the customer's cold or hot water plumbing to a sink tap or other plumbing fixture. The plumbing fixture is the end of the potable water system and the start of the waste disposal system.

Under certain conditions water can flow in the reverse direction. This is known as **backflow**. Backflow occurs when a backsiphonage or backpressure condition is created in a water line.

**Backsiphonage** may occur due to a loss of pressure in the water distribution system during a high withdrawal of water for fire protection, a water main or plumbing system break, or a shutdown of a water main or plumbing system for repair. A reduction of pressure below atmospheric pressure creates a vacuum in the piping. If a hose bib was open and the hose was submerged in a wading pool during these conditions, the non-potable water in the pool would be siphoned into the house's plumbing and back into the public water system.

**Backpressure** may be created when a source of pressure, such as a pump, creates a pressure greater than that supplied from the distribution system. If a pump supplied from a non-potable source, such as a landscape pond, was accidentally connected to the plumbing system, the non-potable water could be pumped into the potable water supply.

## How to Prevent Contamination of Your Drinking Water

Protect your drinking water by taking the following precautions:

### **Don't:**

- Submerge hoses in buckets, pools, tubs, sinks, ponds, etc.
- Use spray attachments without a backflow prevention device.
- Connect waste pipes from water softeners or other treatment systems to the sewer, submerged drain pipe, etc.
- Use a hose to unplug blocked toilets, sewers, etc.

### **Do:**

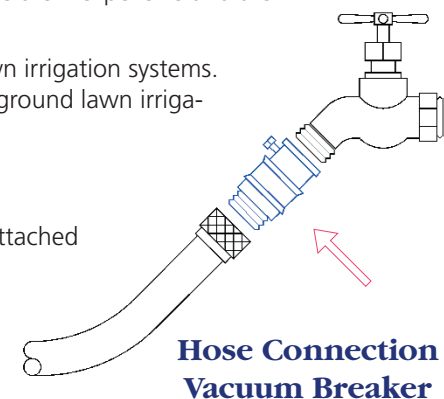
- ✓ Keep the ends of hoses clear of all possible contaminants.
- ✓ If not already equipped with an integral (built-in) vacuum breaker, buy and install hose bib type vacuum breakers on all threaded faucets around your home. These devices are inexpensive and are available at hardware stores and home improvement centers.
- ✓ Install an approved backflow prevention assembly on all underground lawn irrigation systems. Remember, a plumbing permit is required for the connection of an underground lawn irrigation system to your plumbing system.

## Hose Connection Vacuum Breaker

Hose connection vacuum breakers are specifically made for portable hoses attached to threaded faucets. Their purpose is to prevent the flow of contaminated water back into the drinking water. These devices screw directly to the faucet outlet. They can be used on a wide variety of installations, such as service sinks, hose faucets near a wading pool, laundry tub faucets, etc.

Some units are designed for manual draining for freezing conditions. Some are furnished with breakaway set screws as a tamper proof feature.

These device are not intended for operation under continuous pressure.



## Protection of the Water Purveyor's Distribution System

In general, the installation of plumbing in compliance with the plumbing code will provide adequate protection for your plumbing system from contamination.

However, the water purveyor may require (as a condition of service) the installation of a backflow prevention assembly on the water service to provide additional protection for the public water system. A backflow prevention assembly will normally be required where a single-family residence has special plumbing that increases the hazard above the normal level found in residential homes, or where a hazard survey cannot be completed.

To help determine if a backflow prevention assembly is required, the water purveyor may send residential customers a Cross Connection Control Survey Questionnaire. The water purveyor will evaluate the returned questionnaires to assess the risk of contamination to the public water system. Based on the results of the evaluation, the installation of backflow prevention assemblies may be required on services to some customers.