

2018 Karluk Consumer Confidence Report

PWSID# AK2250087

Is my water safe?

We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies.

Do I need 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 Water Drinking Hotline (800-426-4791).

Where does my water come from?

The Karluk Water System uses surface water collected in a screened water intake (IN001) located in Nunalik Creek.

Source water assessment and its availability

Source water assessment and its availability

A source water assessment for the Karluk water well was completed in 2006 and the results of the assessment are:

Executive summary:

The Wellhead/Surface Intake Susceptibility is Low.

The Aquifer Susceptibility is Very High.

The overall vulnerability to potential contaminants is:

Bacteria and Viruses is Medium;

Nitrates/Nitrites is Medium;

Volatile Organic Chemicals is Medium;

Inorganics/Heavy Metals is Medium;

Synthetic Organic Chemicals is Medium;

Other Organic Chemicals is Medium.

For further information regarding this source water assessment, please contact the local water system operator, or the Alaska Resources Library & Information Services (ARLIS) located at 3211 Providence Drive, Room 111, Anchorage, Alaska 99508; phone number 907-272-7547. If the water operator does not have copy of the source water assessment results, you may also access it online at the ADEC Drinking Water Watch website. Instructions on how to access it online may be obtained at:

<https://dec.alaska.gov/DWW/JSP/swaDisclaimer.html>. For specific questions regarding the results of the source water assessments, you may contact Chris Miller from ADEC Drinking Water Protection Program at 907-269-7549.

Why are there contaminants in my 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 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). 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: 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, 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, and can also come from gas stations, urban stormwater runoff, and septic systems; and 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, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

How can I get involved?

Persons interested in the Karluk water system can use the information in this report to contact us.

Waivers

ADEC has granted us a monitoring waiver for Synthetic Organic Compounds (SOC). We are not required to monitor during the waived compliance period. We will continue to apply for waiver renewal at the end of each compliance period.

Sanitary Survey Corrective Actions (CASS)

A sanitary survey of the Karluk water system was completed in 2013 and again in 2016, and the next is scheduled for 2019. A sanitary survey is a periodic checkup of an individual water system to identify problems which may affect the safety of the water. Community water systems must complete a sanitary survey every three years by a qualified drinking water professional. Any deficiencies found in the survey must be fixed, documented, and reported to ADEC. The Karluk water system has been working to correct the list of deficiencies found during the 2013 sanitary survey, which include:

1. The water storage tank has organics growing in it and no means to prevent rusting as it is not lined or coated on the inside. In 2007 ANTHC conducted an inspection and cleaning of the storage tank, and at that time it was concluded that the storage tank condition was severe enough to recommend complete removal and replacement. The Department requires that the storage tank be repaired or replaced. Since then, the ANTHC has donated a new tank and we paid to have it delivered to Karluk. We are seeking funding for the water tank project engineering and construction. Once the project is complete, we will seek operational approval from ADEC.
2. The water storage tank is not structurally sound. It has been noted in previous surveys that the condition of the storage tank is beyond repair. The foundation is uneven and presenting a potential problem. Again, we have a tank and are currently seeking funding for engineering and construction to complete the project.

3. The current configuration of the system prevents Karluk from meeting the minimally required 0.5-log inactivation of Giardia cysts. The storage tank is RAW water and does not serve a purpose in providing disinfection contact time. The piping from the treatment plant to the distribution system (450 feet of 8 in PVC pipe) is not sufficient to meet contact time. Karluk recently applied for Infrastructure Protection Funding (IPF) for the water pump house upgrades and was denied. Karluk will be reapplying for the IPF funding shortly. This project would add a new Chlorine contact tank system in the existing pump house to solve the contact time problem.

4. Karluk does not meet the requirements of the Surface Water Treatment Rule since there is no coagulant added before filtration through the pressure sand filters. The ANTHC conducted a pilot project a few years ago to determine what was needed. A temporary coagulation system was installed and testing found the appropriate coagulant. We have identified what is needed to correct the situation, and have included it in the water system upgrades project. We are seeking funding for engineering and construction.

5. In the 2013 Sanitary Survey it was noted there is a cross-connection in the water system wherein the valve configuration at the treatment plant allows the plant to be fully bypassed, enabling raw water to flow directly to the distribution system. This has been included in the water system upgrades project. We are seeking funding for engineering and construction.

6. Karluk's water system does not meet the treatment requirements of the surface water treatment rule due to not filtering as required or meeting CT requirements for disinfection. In addition the configuration of the system prevents them from monitoring a post filter turbidity and an entry point to distribution system chlorine residual. This has been included in the water system upgrades project. We are seeking funding for engineering and construction. We can monitor daily chlorine and turbidity

7. It was noted during the survey that the two filters located in the treatment plant are equipped with solo valves. These types of valves have been known to be leaky and present a potential threat for cross contamination. Based on the condition of the filters, it is advised that you replace the vessels with newer ones that do not contain solo valves. Only one filter tank and solo valve is operational at this time. The other has been bypassed and is inoperable. The operational Solo valve is leaking and the filter tank is very rusty. This system has been patched, but needs a complete replacement. This has been added to our water system upgrade project and needs funding for engineering and construction.

As you can see, the Karluk water system needs to be upgraded and many components need to be replaced. We are currently seeking funding for engineering and construction. The Karluk water system has been contributing to the project through repairs to the pump house. We were unable to log the daily flow. We recently purchased new pipe, fittings, valve, and a new flow meter. We have an employee who will contribute their time to install these parts in 2019. Then we will be able to monitor and record the water system flow.

BOIL Water Notice

The Karluk water system has been under a long term Boil Water Notice due to inadequate treatment and Surface Water Treatment Rule (SWTR) filtration inadequacies. We will continue to be on a Boil Water Notice until the water system has been upgraded and approved by ADEC. If you have any questions regarding the Boil Water Notice, please contact us using the contact information in this report.

Additional Information for Lead

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. Karluk Water System 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. 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 <http://www.epa.gov/safewater/lead>.

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 we detected during the calendar year of this report. 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 calendar year of the report. 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 our 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.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Detect In Your Water	Range		Sample Date	Violation	Typical Source
				Low	High			
Disinfectants & Disinfection By-Products								
(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants)								
Chlorine (as Cl ₂) (ppm)	4	4	1.2	.1	1.2	2018	No	Water additive used to control microbes
Haloacetic Acids (HAA5) (ppb)	NA	60	4.3	NA	NA	2018	No	By-product of drinking water chlorination.
TTHMs [Total Trihalomethanes] (ppb)	NA	80	10	0	10	2018	No	By-product of drinking water disinfection.
Inorganic Contaminants								
Nitrate [measured as Nitrogen] (ppm)	10	10	.908	NA	NA	2018	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Radioactive Contaminants								
Alpha emitters (pCi/L)	0	15	.14	NA	NA	2016	No	Erosion of natural deposits
Radium (combined 226/228) (pCi/L)	0	5	.45	NA	NA	2016	No	Erosion of natural deposits
Contaminants	MCLG	AL	Your Water	Sample Date	# Samples Exceeding AL	Exceeds AL	Typical Source	
Inorganic Contaminants								
Copper - action level at consumer taps (ppm)	1.3	1.3	0.0915	2018	0	No	Corrosion of household plumbing systems; Erosion of natural deposits.	

Contaminants	MCLG	AL	Your Water	Sample Date	# Samples Exceeding AL	Exceeds AL	Typical Source
Inorganic Contaminants							
Lead - action level at consumer taps (ppb)	0	15	ND	2018	0	No	Corrosion of household plumbing systems; Erosion of natural deposits.

Unit Descriptions	
Term	Definition
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
pCi/L	pCi/L: picocuries per liter (a measure of radioactivity)
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.

Important Drinking Water Definitions	
Term	Definition
MCLG	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	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	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	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	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.
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

TT Violation	Explanation	Length	Health Effects Language	Explanation and Comment
Surface water treatment rule filtration and disinfection violations	A sanitary survey of the Karluk water system was completed in 2013 and again in 2016, and the next is scheduled for 2019. A sanitary survey is a periodic checkup of an individual water system to identify problems which may affect the safety of the water. Community water systems must complete a sanitary survey	The seven significant deficiencies were identified in the 2013 and 2016 sanitary surveys and were addressed in a letter received from ADEC on 3/8/18.	Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps,	Please see the description of the sanitary survey corrective actions and our responses as noted above.

TT Violation	Explanation	Length	Health Effects Language	Explanation and Comment
	<p>every three years by a qualified drinking water professional. Any deficiencies found in the survey must be fixed, documented, and reported to ADEC. The Karluk water system has been working to correct the list of seven deficiencies found during the 2013 and 2016 sanitary surveys. We also did not maintain a chlorine residual in our water system as required in 2018.</p>		<p>diarrhea, and associated headaches.</p>	

For more information please contact:

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