



City and Borough of Sitka Public Works Department

Environmental Division

100 Alice Loop • Sitka, Alaska 99835

907 747-4060 • 907 966-2257 fax

DRINKING WATER QUALITY REPORT – FOR THE YEAR 2016

SITKA, ALASKA

(Public Water System No. AK2 130075)

The City and Borough of Sitka (CBS) Water Department is pleased to present this year's annual Drinking Water Quality Report. This report is designed to inform you about the high quality water and services we deliver every day. Our goal is to constantly provide you with a safe, dependable and high quality supply of drinking water. We want our valued customers to understand the efforts made to continually improve our water system and to protect our water resources. If you have any questions regarding this report, your water utility, or would like to be added to a facility tour list, please contact Environmental Superintendent, Shilo Williams at 747-4060 or at shilo.williams@cityofsitka.org. According to state and federal law, the CBS Assembly makes the ultimate decisions related to water treatment process. They meet the second and fourth Tuesday of each month at Harrigan Centennial Hall. These meetings are open to the public.

Sitka's primary water source is surface water from Blue Lake. Our secondary water source has been surface water from Indian River, but this is no longer an approved potable water source without filtration. Through the Alaska Drinking Water Protection Program, the State of Alaska Department of Environmental Conservation (ADEC) completed a source assessment in 2003 and provided a final source water protection plan in 2004. Copies of this plan can be obtained from your water department.

As water travels to the collection point, either lake or river, it may pick up contaminants it comes in contact with. These contaminants could include microbes, inorganic and organic material, or radioactive substances. 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. Guidelines from the Environmental Protection Agency (EPA) Center for Disease Control (CDC) on the appropriate means to lessen the risk of infection by Cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791). All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It is important to remember that the presence of these contaminants does not necessarily pose a health risk. The Sitka Public Water System routinely monitors for contaminants in your drinking water according to State and Federal laws and regulations. The following tables show results of that monitoring for the period of January 1st to December 31st, 2016.

In the following tables you will find terms you might not be familiar with. To help you better understand these terms we have provided the following definitions:

NR: Not Regulated – reporting this data is not required.

NA: Not Applicable, Not Available – does not apply or is not available.

ND: Non-Detects – laboratory analysis indicates that the contaminant is not present.

MRL: Method Reporting Limit – the minimum concentration that can be measured.

ppm: Parts per million or mg/l: Milligrams per liter – corresponds to one part per million parts.

ppb: Parts per billion or Micrograms per liter – corresponds to one part per billion parts.

NTU: Nephelometric Turbidity Unit – nephelometric turbidity unit is a measure of clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

AL: Action Level – the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

MCL: Maximum Contaminant Level – The "Maximum Allowed": is 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.

MCLG: Maximum Contaminant Level Goal – The "Goal" is 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.

Waivers, or reduced sampling requirements, have been obtained for many of the regulations pertaining to the monitoring of our water system. These waivers were granted after years of test results that were significantly less than the MCLs of the various

contaminants. Currently we have waivers for Synthetic Organic Contaminants, Asbestos, Organics/Pesticides, Inorganics, (Nitrites), and Dioxins; we did not test for them during the time period covered by this report. Previous and current monitoring results are tabled below.

2016 TEST RESULTS FOR BLUE LAKE WATER						
<i>Contaminant</i>	<i>MCL Violation</i>	<i>Level Detected</i>	<i>Unit Measurement</i>	<i>MCL Goal</i>	<i>MCL</i>	<i>Likely source of contamination to the best of our present knowledge</i>
Microbiological Contaminants						
Total Coliform Bacteria	None	ND	Colonies per 100 ml	0	0	Naturally present in the environment
Turbidity	None	10.07 (1) (2)	NTU	NA	NA	Natural soil runoff, glacial silt, land slides
<p>Note (1) highest monthly raw water turbidity value was reported on September 17, 2016 (38 Minutes) due to penstock flushing. Note (2) High turbidity (19 Days) due to heavy rains Sept. 14th through Oct. 2nd, 2016. 1.58 NTU-10.07 NTU Total Coliform: Coliforms are bacteria that are used as an indicator that other, potentially-harmful, bacteria may be present. None were found.</p> <p>Turbidity: Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches. Blue Lake's turbidity is mostly inorganic in nature (glacial silt) and often not directly associated with microbial contamination.</p>						
Inorganic Contaminants						
(Waiver except: Nitrate-N, Arsenic, Lead and Copper, Cyanide, Fluoride added for enhanced dental health)						
Nitrate (as Nitrogen)	None	0.190	ppm	<10	10	Erosion of natural deposits, animal waste
Fluoride (Voluntary)	None	Avg. 0.62	ppm	2.0	4.0	Water treatment additive, natural deposits
Arsenic	None	ND	ppm	0.0	0.010	Erosion of natural deposit
Cyanide	None	ND	ppm	<0.2	0.2	Industrial discharge
Barium	None	ND	ppm	<2.0	2.0	Erosion of natural deposit
<p>Nitrate: Infants below the age of six months, who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.</p> <p>Fluoride: Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth. Note, that your drinking water fluoride level is controlled to the recommended range of 0.7 to 1.2 ppm.</p> <p>Arsenic: At high concentrations arsenic is known to cause cancer in humans and is linked to other health effects such as skin damage and circulatory problems.</p> <p>Cyanide: Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.</p> <p>Barium: The amount of barium that is detected in food and water usually is not high enough to become a health concern.</p>						

In 2011 there was discussion nationally about chromium in drinking water supplies, made famous by the movie Erin Brockovich. In February 2011 CBS drinking water was voluntarily tested for total Chromium and Hexavalent Chromium, both results were non-detect, ND.

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. The City and Borough of Sitka water department is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. There are several steps you can take to reduce your risk of exposure to lead through drinking water. When you haven't used water for several hours, run the cold water tap for a minute or two, or until the water gets noticeably colder. The lower temperature indicates you cleared the water that was standing in pipes. (To conserve, catch the flushed tap water for household uses such as watering plants or cleaning.) Use cold water whenever you are preparing food and beverages, including cooking, making ice and preparing instant formula. Hot water dissolves lead faster and is likely to contain higher levels of lead if present. Particles can collect in faucets' tips, at the aerator screen. Remove and clean aerators every month and replace them each year. 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>. You can also look for potential sources of lead in your service line and household plumbing. You should consider replacing if you find pipes made of lead or galvanized iron, lead solder connecting your household pipes, or brass faucets, valves, and fittings. If you are hiring someone to test, repair or replace your service line, household pipes or fixtures, we recommend using an experienced, licensed plumber.

Prior to 2001, 35 of 40 Sitka households exceeded at least one action level of the lead and copper monitoring program. To reduce the corrosive nature of our drinking water, a sodium carbonate (soda ash) solution has been added since January 2001. This addition has been very successful in reducing the number of lead and copper samples that exceed the action levels of these contaminants. The latest round of sampling was completed in June 2014. Results of this testing are tabulated below. The 2014 monitoring showed 90th percentile values below action levels. Lead and copper monitoring will be repeated in July 2017.

“At the Tap” Lead & Copper Monitoring June, 2014

Contaminant	AL	MCLG	Unit of Measurement	90th % value	Likely Source of Contamination to the Best of our Present Knowledge
Lead 2014	0.015	0.0	ppm	0.0115	Corrosion of household plumbing systems
Copper 2014	1.30	1.3	ppm	0.443	Corrosion of household plumbing systems

Total Organic Carbon (TOC) has no health effects. However, TOC provides a medium for the formation of disinfection by-products. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL over many years may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of cancer. Sitka’s results are well below the MCL.

Disinfection Byproducts (TTHM & HAA5 sampled Quarterly for average & TOC’s sampled monthly for average)						
Contaminant	MCL Violation	Level Detected	Unit Measure	MCLG	MCL	Likely Source of Contamination to the Best of our Present Knowledge
Total Trihalomethanes (TTHM)	None	19.90	ppb	NA	80	By-Product of Chlorination
Total Haloacetic Acids (HAA5)	None	24.82	ppb	NA	60	By-Product of Chlorination
Total Organic Carbon (TOC)	None	0.721	mg/L	NA	NA	Naturally present in Environment

Radioactive Contaminants						
Contaminant (2016)	MCL Violation	Level Detected	Unit Measure	MCLG	MCL	Likely Source of Contamination to the Best of our Present Knowledge
Gross Alpha (Inc. Radon)	None	ND	pCi/L	0	15	Erosion of Natural Deposits
Uranium (2006)	None	0.02	pCi/L	0	30	Erosion of Natural Deposits
Radium – 226	None	0.06	ppm	0	5	Erosion of Natural Deposits
Radium – 228	None	0.29	ppm	0	5	Erosion of Natural Deposits

The tables above show our water system had no MCL violations. CBS drinking water meets or exceeds all federal and state requirements. ADEC confirms that CBS had no violations to report in 2016. We have learned through our monitoring and testing that some contaminants have been detected. The EPA has determined that your water IS SAFE at these levels.

Sitka’s Water Treatment: Blue Lake, our primary water source is very clean in its natural state. We anticipate some water quality changes as the lake fills to the new dam elevation. With Blue Lake’s watershed and high quality water we are not required to filter it prior to disinfection and distribution to you. Proper disinfection is accomplished by adding a small amount of chlorine to guarantee our drinking water is safe from harmful microorganisms. Fluoride is added to increase the natural level of fluoride in our drinking water to a level recommended by the Public Health Service and the ADEC. Fluoride addition helps reduce the incidence of tooth decay. Additional disinfection of Blue Lake’s water is required by federal regulations by the fall of 2016. Ultra Violet (UV) light was selected as the best and most cost effective method of providing this additional disinfection. UV disinfection will improve our water quality by enhancing ‘disinfection’ of Cryptosporidium and by providing a second treatment barrier for microbiological contaminants. In May of 2015, the UV facility construction was completed and testing of the treatment components began. The UV facility has been operating since May with a few minor adjustments made along the way. Significant state funding was secured for the UV facility.

Sodium carbonate (soda ash) is added to the drinking water at the Corrosion Control Facility (CCF) located at 103 Jarvis Street. Soda ash slightly increases the pH and alkalinity of our treated water thereby reducing the leaching of lead and copper from private plumbing systems into your tap water.

The CBS takes pride in continuing to provide you and your family with clean, quality water. In order to maintain a safe and dependable water supply, we need to make improvements to the treatment or distribution systems. These improvements sometimes cause short-term inconveniences or rate structure adjustments. Thank you for understanding the importance of our drinking water. Help keep our Blue Lake and Indian River watersheds clean. **Safe drinking water is everyone’s business.**

The Water Department presents an annual Watershed Control Report to the ADEC. That report along with this and previous Drinking Water Quality Reports will be on file at the City and Borough of Sitka Public Works Office and are available for your review on the City’s web site, www.cityofsitka.com.