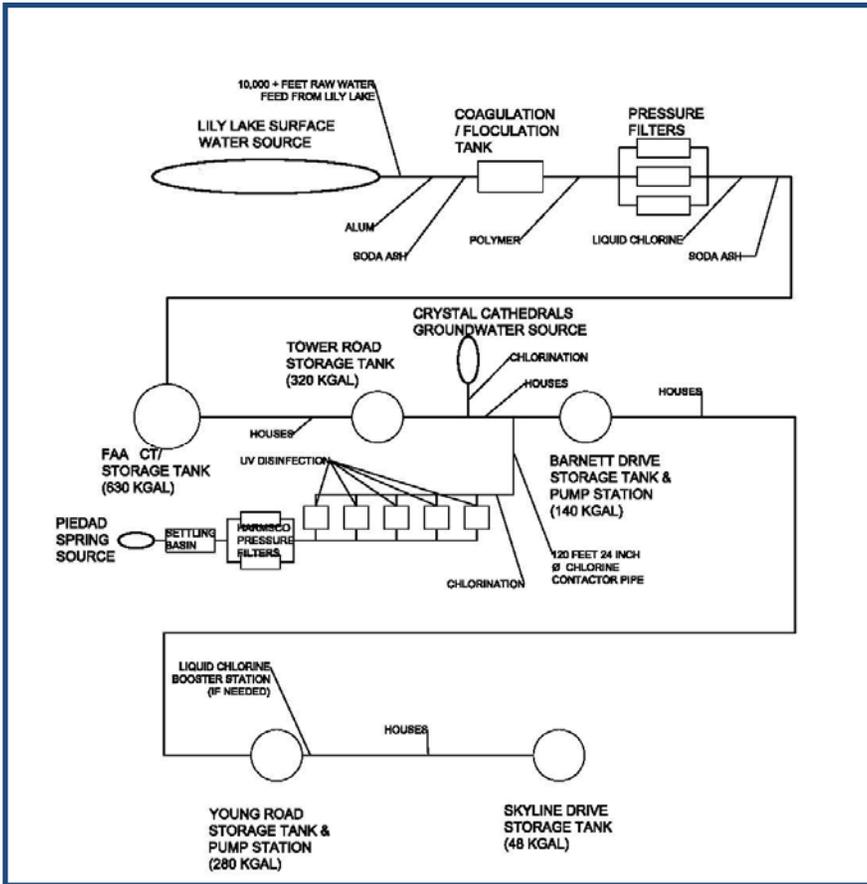




Haines Borough
PO Box 1209
Haines, Alaska 99827
907-766-2231



Schematic of Haines Borough Water System

Additional Information

If you have questions about this report or need more information, contact:

Dennis Durr, WTP Operator
PO Box 1209
Haines, AK 99827
907-766-2200 or 907-766-2716
ddurr@haines.ak.us



Pledge to Protect Community Water Sources

2018
HAINES BOROUGH
DRINKING WATER QUALITY
REPORT
Postal Customer

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Haines Borough

How Safe Is Your Water?

We are pleased to present this year's *Annual Water Quality Report* (Consumer Confidence Report or CCR) as required by the Safe Drinking Water Act (SDWA).

This report provides 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. We routinely test for over 80 contaminants as scheduled. Test results showed no levels higher than what the US Environmental Protection Agency (EPA) and the Alaska Department of Environmental Conservation (ADEC) allow.

What Precautions Do You Need to Take?



Monitoring & Reporting of Data Compliance Violations

Missed Samples

- Due to Water Treatment Plant (WTP) Operator injuries, samples for disinfection by-products were missed in the second quarter of 2018.
- Crystal Cathedral source was not used in 2018, and thus, no samples were taken. Sampling has resumed in 2019 as this source is on-line again.

Copper Action Level Exceeded

- Copper (Cu) is a reddish metal that is commonly used in household plumbing. It is also an essential nutrient for humans in small amounts; however, too much copper can cause adverse health effects. Water that is corrosive can leach Cu from pipes into drinking water. WTP Operators use soda ash to adjust the pH and reduce corrosivity. The longer water has stood idle in copper pipes, the more likely Cu will be in your water.
- The EPA Action Level for copper was exceeded at two of the 10 testing sites in 2015 and 2016. Monitoring for copper and lead was increased from 10 samples per year to 40 samples (quarterly tests at 10 sample sites) in 2015 and 2016. 20 samples were taken in 2017 and 10 samples in 2018: all the sample results from consumer taps for these two years were below the Action Level.
- To reduce exposure to copper, run your household water used for cooking and drinking until you feel the water get colder (30 to 60 seconds) anytime it has not been used for more than six hours to clear the pipes and bring in fresh water. Furthermore, hot water dissolves copper more quickly than cold



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

EPA and the Centers for Disease Control & Prevention (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 at: 800-426-4791.

More Water Quality Data & Definitions

CONTAMINANTS	MCLG or MRDLG	MCL, TT or MRDL	YOUR WATER	RANGE		SAMPLE DATE	VIOLATION	TYPICAL SOURCE
				LOW	HIGH			
Radioactive Contaminants								
LILY LAKE								
Alpha Emitters PCI/L	NA	15	0	NA	NA	2017	No	Erosion of natural deposits
Radium 226/228 PCI/L	NA	5	0.12 0.18	NA	NA	2017	No	Erosion of natural deposits
CRYSTAL CATHEDRAL								
Alpha Emitters PCI/L	NA	15	2.0	NA	NA	2017	No	Erosion of natural deposits
Radium 226/228 PCI/L	NA	5	0.11 0.69	NA	NA	2017	No	Erosion of natural deposits
PIEDAD SPRING								
Alpha Emitters PCI/L	NA	15	0	NA	NA	2017	No	Erosion of natural deposits
Radium 226/228 PCI/L	NA	5	0.048 0	NA	NA	2017	No	Erosion of natural deposits

UNIT DESCRIPTIONS	
Term	Definition
ppm	parts per million, or milligrams per liter (mg/L)
ppb	parts per billion, or micrograms per liter (µg/L)
PCI/L	picocuries per liter (a measure of radioactivity)
NA	not applicable
ND	not detected
NR	monitoring not required, but recommended.
IMPORTANT DRINKING WATER DEFINITIONS	
AL	Action Level: concentration of a contaminant that triggers treatment or other requirements for the water system.
HAA5	Haloacetic acid: a byproduct of drinking water chlorination.
MCL	Maximum Contaminant Level: 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.
MCLG	Maximum Containment Level Goal: 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.
MNR	Monitored Not Regulated
MRDL	Maximum Residual Disinfectant Level: 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.
MRDLG	Maximum Residual Disinfection Level Goal: 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.

2018 Water Report

Where Are the Sources for Your Public Water System?

The primary source of Haines drinking water is Lily Lake, located 2.5 miles southeast of the Haines Townsite on the Chilkat Peninsula. Approximately 20 percent of the Haines drinking water is supplied from the Piedad Spring System, a groundwater source located 1.5 miles northwest of the Haines Town site. In 2018, no households received water from a third source, the Crystal Cathedral wells, which are located 1.5 miles west of the Chilkoot Inlet.



Learn More About Local Water Quality

Three Source Water Assessments

Very High, Medium & Low Susceptibility Ratings

The public water system for the Haines Townsite is a Class A Water System consisting of three sources. The *Source Water Assessment* for each of these sources is available at the Haines Borough Administration Offices. These assessments are used by the by Haines Borough staff to assess water quality risks and can be used as a foundation for local volunteer protection efforts.

Lily Lake Source Water Assessment (LLSWA) - Surface Water Source

- The overall protection area received *Susceptibility Rating of Very High*.
- The overall protection area received a *Vulnerability Rating of Medium* for metals, other organic chemical and synthetic chemicals.

Piedad Spring Source Water Assessment (PSSWA) - Ground Water Source under Direct Influence of Surface Water

- The combined score for the Wellhead and Aquifer has a natural *Susceptibility Rating of Medium* (the Wellhead and Aquifer each received an individual *Susceptibility Rating of Medium*).

- The combined score for the Wellhead and Aquifer received a *Susceptibility Rating of Low* for:
 - * Bacteria/ Viruses
 - * Nitrites/Nitrates
 - * Volatile Organic Chemicals
 - * Heavy Metals
 - * Synthetic Organic Chemicals
 - * Other Chemicals

Crystal Cathedral Source Water Assessment (CCSWA) - Ground Water

- The combined score for the Wellhead and Aquifer has a natural *Susceptibility Rating of Medium* (the Wellhead and Aquifer each received an individual *Susceptibility Rating of Medium*).
- The combined score for the Wellhead and Aquifer received a *Susceptibility Rating of Medium* for:
 - * Bacteria/Viruses
 - * Nitrites/Nitrates
- The combined score for the Wellhead and Aquifer received a *Susceptibility Rating of Low* for:
 - * Volatile Organic Chemicals
 - * Heavy Metals
 - * Synthetic Organic Chemicals
 - * Other Chemicals



Landscape Condition
Patterns of natural land cover, natural disturbance regimes, lateral and longitudinal connectivity of the aquatic environment, and continuity of landscape processes.



Habitat
Aquatic, wetland, riparian, floodplain, lake, and shoreline habitat. Hydrologic connectivity.



Hydrology
Hydrologic regime: Quantity and timing of flow or water level fluctuation. Highly dependent on the natural flow (disturbance) regime and hydrologic connectivity, including surface-ground water interactions.



Geomorphology
Stream channels with natural geomorphic dynamics.



Water Quality
Chemical and physical characteristics of water.



Biological Condition
Biological community diversity, composition, relative abundance, trophic structure, condition, and sensitive species.

2018 Water Quality Data

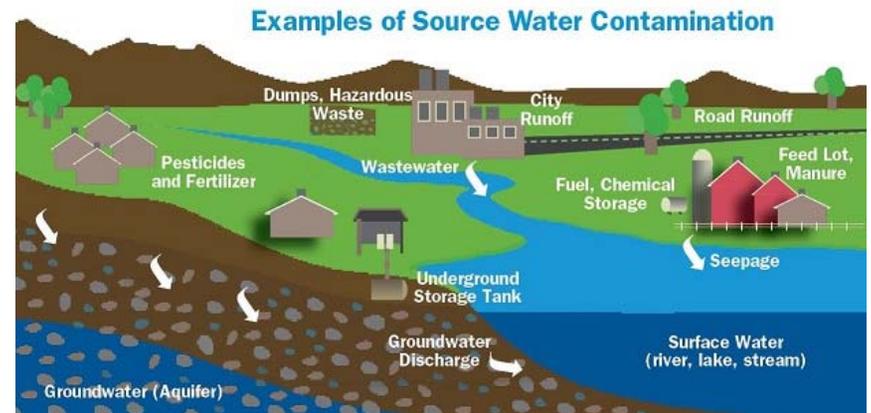
CRYSTAL CATHEDRAL		2013	2013	2013	2013	2009	2017
Barium – ppm	2	0.04	NA	No	Erosion of natural deposits; Discharge of drilling wastes & metal refineries	NA	No
Chromium - ppb	100	1.24	NA	No	Erosion of natural deposits; Discharge from steel & pulp mills	NA	No
Fluoride – ppm	4	0.17	NA	No	Erosion of natural deposits; Water additive; Discharge from fertilizer & aluminum factories	NA	No
Selenium - ppb	50	0.90	NA	No	Erosion of natural deposits; Discharge from mines, petroleum & metal refineries	NA	No
Beryllium - ppb	4	0.27	NA	No	Discharge from metal refineries & coal-burning factories; Discharge from electrical, aerospace & defense industries	NA	No
Arsenic - ppb	10	0	NA	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass & electronics production wastes	NA	No

2018 Water Quality Data

CONTAMINANTS	MCLG or MRDLG	MCL, TT or MRDL	YOUR WATER	RANGE		SAMPLE DATE	VIOLATION	TYPICAL SOURCE
				LOW	HIGH			
LILLY LAKE & PIEDAD SPRING								
Inorganic Contaminants								
Barium - ppm	2	2	0.016	NA	NA	2013	No	Erosion of natural deposits; Discharge of drilling wastes & metal refineries
Chromium - ppb	100	100	0	NA	NA	2013	No	Erosion of natural deposits; Discharge from steel & pulp mills
Fluoride - ppm	4	4	0	NA	NA	2013	No	Erosion of natural deposits; Water additive; Discharge from fertilizer & aluminum factories
Selenium - ppb	50	50	0	NA	NA	2013	No	Erosion of natural deposits; Discharge from mines, petroleum & metal refineries
Beryllium - ppb	4	4	0	NA	NA	2013	No	Discharge from metal refineries & coal-burning factories; Discharge from electrical, aerospace & defense industries
Arsenic - ppb	10	10	0	NA	NA	2017	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass & electronics production wastes

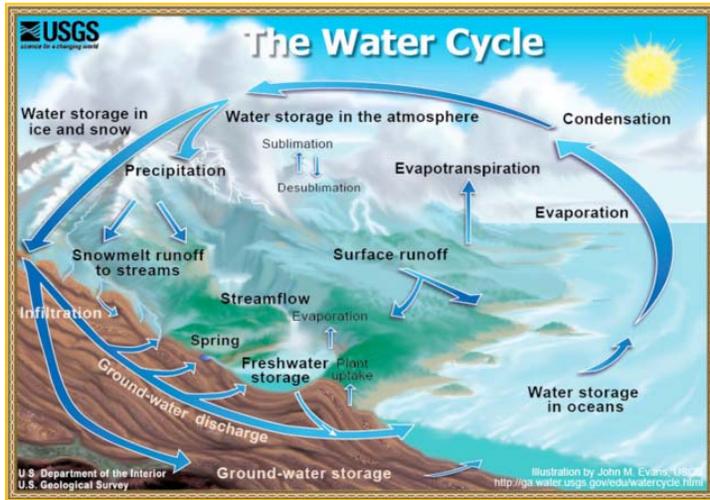
What Contaminants Are Found in Your Drinking Water?

Drinking water, including bottled water, may be reasonably 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 (EPA) Safe Drinking Water Hotline at 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 grounds, it dissolves other substances, including:

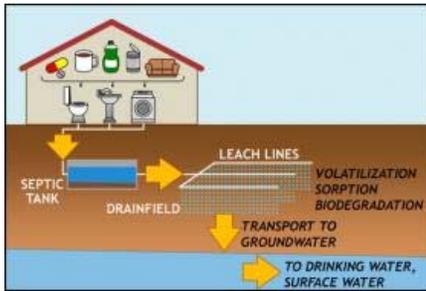
- Naturally occurring minerals
- Substances resulting from the presence of animals or from human activity
- Microbial contaminants, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife)
- Inorganic contaminants, such as salts and metals (which can occur naturally or result from urban storm-water 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 storm-water runoff, and residential uses)
- Organic chemical contaminants, including synthetic and volatile organic chemicals (which are byproducts of industrial process and petroleum production and 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)



Citizen Involvement

Public Meetings & Protective Actions

Citizens may get involved by attending the Haines Borough Assembly meetings. The dates and agenda are posted online at: www.hainesborough.us. Meeting dates and agenda are also posted at the Borough Offices, Library and Post Office.



Source Water Protection Tips

Protection of drinking water is everyone's responsibility. You can help protect community drinking water source in several ways:

- Pick up after your pets.
- Eliminate excess use of lawn and garden fertilizers and pesticides; they contain hazardous chemicals that can reach drinking water sources.
- If you have a septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public water system.
- Dispose of chemicals properly; take used motor oil to a recycling center.

CONTAMINANTS	MCLG	YOUR WATER	SAMPLE DATE	# OF SAMPLES EXCEEDING AL	EXCEEDS AL	TYPICAL SOURCE
Inorganic Contaminants						
Copper -- ppm Consumer taps	1.3	0.81	2018	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead -- ppb Consumer taps	0	1.50	2018	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

Protect Your Septic System

- 1 Inspect your system (every 3 years) and pump your tank as necessary (generally every 3 to 5 years).
- 2 Use water efficiently.
- 3 Don't dispose of household hazardous wastes in sinks or toilets.
- 4 Care for your drainfield. Avoid driving or parking vehicles on your drainfield. Plant only grass over and near your drainfield to avoid damage from roots.

How do I maintain my septic system?

Pump frequently
You should have your septic system inspected at least every 3 years by a professional and your tank pumped as necessary (generally every 3 to 5 years).

Use water efficiently
Average indoor water use in the typical single-family home is about 70 gallons per person per day. Dropping faucets can waste about 2,000 gallons of water each year. Leaky toilets can waste as much as 200 gallons each day. The more water a household conserves, the less water enters the septic system.

Flush responsibly
Dissolve, feminine hygiene products, condoms, diapers, cotton swabs, cigarette butts, coffee grounds, cat litter, paper towels, and other kitchen and bathroom items can clog and potentially damage septic system components. Flushing household chemicals, gasoline, oil, pesticides, antifreeze and paint can stress or destroy the biological treatment taking place in the system or might contaminate surface waters and groundwater.

Use Water Efficiently!

- Fill the bathtub with only as much water as you need
- Turn off faucets while shaving or brushing your teeth
- Run the dishwasher and clothes washer only when they're full
- Use toilets to flush sanitary waste only (not kitty litter, papers, or other trash)
- Make sure all toilet flush valves are completely turned off when not in use
- Eliminate leaks
- Install aerators in the faucets in your kitchen and bathroom
- Replace old dishwashers, toilets, and clothes washers with Energy Star high-efficiency models

For more information on water conservation, please visit www.epa.gov/eem/water-efficiency

https://www3.epa.gov/npdes/pubs/homeowner_guide_short.pdf

2018 Water Quality Data

CONTAMINANTS	MCLG or MRDLG	MCL, TT or MRDL	YOUR WATER	RANGE		SAMPLE DATE	VIOLATION	TYPICAL SOURCE
				LOW	HIGH			
Disinfectants & Disinfectant By-Products There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.								
TTHMs - ppb	NA	80	25.6	14.0	34.5	2018	No	By-product of drinking water disinfection
HAA5 - ppb	NA	60	24.5	3.6	48.0	2018	No	By-product of drinking water disinfection
Nitrates There is health concern with nitrates in drinking water, especially for infants under 6 months of age, as exposure can result in methemoglobinemia. All three Haines Borough public water system sources had no detectable limit of nitrates.								
Nitrate -- ppm	10	10	0	0	0	2018	No	Agriculture runoff and septic tanks
Volatile Organic Compounds Haines Borough staff sample for a variety of volatile organic compounds quarterly. Of the 21 chemicals regularly tested, none were above detection limits. All three Haines Borough public water system sources had no detectable amount.								
Xylenes, Total - ppm	10	10	0	0	0	2018	No	Discharge from petroleum and chemical factories

Water Conservation Tips

Do you know that the average U.S. household uses approximately 300 gallons of water per day or 75 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. For more information on water conservation visit: www.cpa.gov/watersense



- 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 to save up to 500 gallons a month.
- Use a water-efficient showerhead; these 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.
- Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait; if it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.
- Adjust sprinklers to water only your lawn. Apply water as fast as the soil absorbs it and during the cooler part of the day to reduce evaporation.
- Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to conserve water

More Source Water Protection Tips

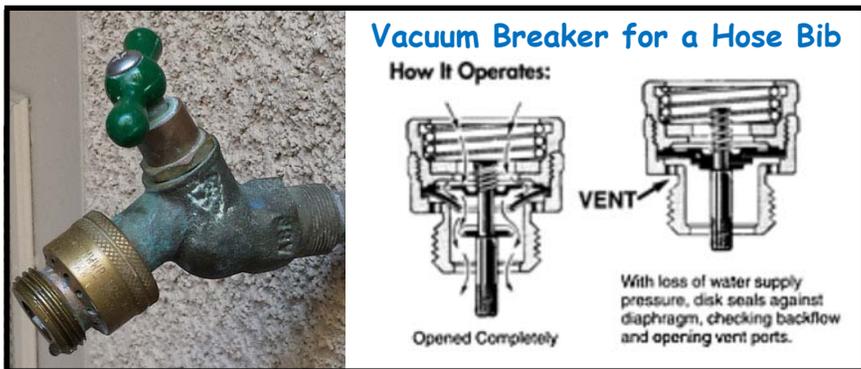
- Contact the local watershed protection organization and volunteer to help: Takshanuk Watershed Council at www.takshanuk.org or 907-766-3542.
- Organize a storm-drain stenciling project with the local government. Stencil a message next to the street drain reminding people: *Dump No Waste - Protect Our Water.*
- Produce and distribute a flyer for households to remind residents that storm drains dump directly into local water bodies.



Cross Connection Control Survey

The purpose of this survey is to determine whether a cross-connection may exist at your home or business. A cross connection is an unprotected or improper connection to a public water distribution system that may cause contamination or pollution to enter the system. The Haines Borough is responsible for enforcing cross-connection control regulations and insuring that no contaminants can, under any flow conditions, enter the distribution system. A vacuum breaker, available from a local hardware store, installed on a hose bib prevents back siphoning (see photo below). If you have any of the devices listed below, please contact us so that we can discuss the issue and, if needed, survey your connection and assist you in isolating it if that is necessary.

- * Boiler/ radiant heater (water heaters not included)
- * Underground lawn sprinkler system
- * Pool or hot tub (whirlpool tubs not included)
- * Additional source(s) of water on the property
- * Decorative pond
- * Watering trough



More Information about 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. Haines Borough 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: www.epa.gov/safewater/lead

2018 Water Quality Data

Water Quality Regulations

In order to ensure that tap water is safe to drink, EPA prescribes regulations that 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 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.

In 2016, the two PWSID — Haines Borough and Crystal Cathedral — were combined into a new PWSID. The following data tables show information for the new combined system as well as some data for the original PWSIDs. Testing is done in the calendar year of the report (2018).

The EPA or ADEC 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 this data, though representative, may be more than one year old. In these tables you will find terms and abbreviations that might not be familiar. To help you better understand these terms, we have provided a table of terms and definitions.

Water Treatment Process

Our water is treated by disinfection. Disinfection involves the addition of chlorine or other disinfectant to kill dangerous bacteria and other microorganisms that may be present. Disinfection is considered one of the major public health advances of the 20th century. However, disinfection does create disinfection by-products that are monitored to ensure they remain at a safe level. Lily Lake and Piedad Spring are also filtered prior to disinfection.

