

2019 City of Craig Water Quality Report AK2120193

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. Last year, we conducted tests for over 80 contaminants. We detected only 6 of those contaminants, and found only 1 at a level higher than the EPA allows. As we informed you at the time, our water temporarily exceeded drinking water standards. (For more information see the section labeled Violations at the end of the report.)

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 City of Craig gets its drinking water through a surface water intake located at North Fork Lake. The lake is approximately nine miles east of Craig.

Source water assessment and its availability

A source water assessment for the City of Craig surface water intake was completed in 2003. Identifying the pathways most likely for surface contamination to reach water intake areas is the first step in determining the water system's risks. These are initially determined by looking at the drainage area contributing overland water flow to a surface water source intake. The entire drainage area is also known as the "drinking water protection area".

The protection area established for surface water sources by the ADEC is usually separated into three zones, limited by the watershed boundary. These zones correspond to the overland-flow distance that water travels to get to the source. The ADEC Drinking Water Protection Program's Technical Advisory Committee developed guidelines for derivation of these zones in 1998.

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Definition of Zones:

<u>Zone</u>	<u>Definition</u>
A	Areas within 1000-ft of lakes or streams
B	Areas within 1-mile of lakes or streams
C	The watershed boundary

The protection area for the City of Craig includes each of these Zones.

The City of Craig is a Class A public water system that operates year round. Access to the intake is available via a restricted access gravel road. For Class A public water system assessments, six categories of drinking water contaminants were inventoried. They include:

- Bacteria and viruses
- Nitrates and/or nitrites
- Volatile organic chemicals
- Heavy metals, cyanide, and other inorganic chemicals
- Synthetic Organic Chemicals
- Other Organic Chemicals

Vulnerability of a drinking water source to contamination is a combination of two factors:

- Surface water susceptibility
- Contaminant risks

A score for the Surface Water Susceptibility of the source is reached by considering the properties of the water intake and the surrounding area. A ranking is assigned for the surface water susceptibility according to the point score:

- Susceptibility of the Surface Water Source-always considered to be “high” (30 points)
 - +
 - Adequate construction of the intake (0-5 points)
 - +
 - Runoff potential within Zone B (0-5 points)
 - +
 - Dilution capacity of the surface water (0-10 points)
 - =
 - Natural Susceptibility (0-50 points)**

Surface water source susceptibility according to the point score:

- 40 to 50 pts Very High
- 30 to < 40 pts High

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Susceptibility of the City of Craig Water Source:

	Score	Rating
❖ Minimum Allowable Susceptibility	30	
❖ Intake construction adequate	0	
❖ Runoff potential	5	
❖ Dilution capacity	15*	
• Overall susceptibility	50	Very High

***Note: Though the dilution capacity of the surface water scoring criteria is (0-10), the increase susceptibility is based on two factors: River or stream discharge flow in cubic feet per second, and lake or pond Area. Flow for the North Fork Dam is < 20,000 cfs, 10 pts. Lake Area ≤ 1 square mile, 5 pts. ADEC has been contacted for further clarification.**

For contaminants, risks to a drinking water source depend on the type, number or density, and distribution of the contaminant sources. The Contaminant Risk score has been derived from an examination of existing, and historical contamination sources that have been detected in the protection area through routine sampling. It also evaluates potential sources of contamination.

City of Craig Contaminant Risks:

Category:	Score	Rating
• Bacteria and viruses	30	High
• Nitrates and/or nitrites	31	High
• Volatile organic chemicals	7	Medium
• Heavy metals, cyanide, and other inorganic chemicals	7	Low
• Synthetic Organic Chemicals	0	Low
• Other Organic Chemicals	7	Low

An overall vulnerability score is assigned for each contaminant type by combining each of the contaminant risk scores with the susceptibility score.

- Susceptibility of the Surface Water Source (0-50 points)

+

- Contaminant Risks (0-50 points)

=

Vulnerability of the Drinking Water Source to Contamination (0-100 points)

Overall Vulnerability Ratings:

- 80 to 100 pts Very High
- 60 to < 80 pts High
- 40 to <60 pts Medium
- < 40 pts Low

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City of Craig Overall Vulnerability: Note: scores are rounded off to the nearest five.

Category	Score	Rating
• Bacteria and viruses	80	Very High
• Nitrates and/or nitrites	80	Very High
• Volatile organic chemicals	55	Medium
• Heavy metals, cyanide, and other inorganic chemicals	55	Medium
• Synthetic Organic Chemicals	50	Medium
• Other Organic Chemicals	55	Medium

Bacteria and Viruses:

Coliforms are found naturally in the environment and although they aren't necessarily a health threat, they are an indicator of other potentially harmful bacteria. The contaminant risk for bacteria and viruses is "High" due to positive coliform detection in Raw Water samples. After combining the contaminant risk for bacteria and viruses with the natural susceptibility of the source, the overall vulnerability of the source to bacteria and virus contamination becomes "**very high**".

Nitrates and Nitrites:

The contaminant risk for nitrates and nitrites is "high" with the proximity of the source water to potential beaver habitat and a gravel road posing the most significant contaminant risks to this source of public drinking water. After combining the contaminant risk for nitrates and nitrites with the natural susceptibility of the source, the overall vulnerability to contamination becomes "**very high**".

Volatile Organic Chemicals:

A possible source of volatile organic chemicals in the protection area is the gravel access road. After combining the contaminant risk for Volatile Organic Chemicals with the natural susceptibility of the source, the overall vulnerability to contamination becomes "**Medium**".

Heavy Metals, Cyanide, and Other Inorganic Chemicals:

The most common source of these chemicals is the infrastructure of the distribution system following treatment process and not from the source waters; although another possible source of these chemicals in the protection area is the gravel road. After combining the contaminant risk for Heavy Metals, Cyanide, and Other Inorganic Chemicals with the natural susceptibility of the source, the overall vulnerability to contamination becomes "**Medium**".

Synthetic Organic Chemicals:

The contaminant risk for synthetic organic chemicals is "low". After combining the contaminant risk for Synthetic Organic Chemicals with the natural susceptibility of the source, the overall vulnerability to contamination becomes "**Medium**".

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Other Organic Chemicals:

The contaminant risk for other organic chemicals is “low”. Gravel roads are a possible source of these chemicals. After combining the contaminant risk with the natural susceptibility of the source, the overall vulnerability to other organic chemicals of the source 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. Or you may call Chris Miller at the ADEC Drinking Water Protection Program at 907-269-4791, or 907-269-7549. You may also access the public source water executive summary data at the ADEC website: <http://dec.alaska.gov/eh/dw/dwp/complete.aspx>.

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 including:

- 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 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 by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water 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.

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How can I get involved?

Persons interested in the City of Craig water system can use the contact 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.

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. City of Craig 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 in the table below.

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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	.96	.11	.96	2019	No	Water additive used to control microbes
Haloacetic Acids (HAA5) (ppb)	NA	60	64.95	31	121.8	2019	Yes	By-product of drinking water chlorination
TTHMs [Total Trihalomethanes] (ppb)	NA	80	60.075	26.7	99.5	2019	No	By-product of drinking water disinfection
Total Organic Carbon (% Removal)	NA	TT	70.84	NA	NA	2019	No	Naturally present in the environment
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	.0168	2017	0	No	Corrosion of household plumbing systems; Erosion of natural deposits	
Inorganic Contaminants								
Lead - action level at consumer taps (ppb)	0	15	.81	2017	0	No	Corrosion of household plumbing systems; Erosion of natural deposits	

Violations and Exceedances

Haloacetic Acids (HAA5)

Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer. Our HAA5 rolling average for the four quarters of 2019 was 64.95 ppb, which is over the MCL of 60 ppb. Our HAA5 was low in the first two quarters and grew higher in the last two quarters, being highest in the fourth quarter. We use best management practices to keep our HAA5 under control.

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)
NA	NA: not applicable
ND	ND: Not detected

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Unit Descriptions	
NR	NR: Monitoring not required, but recommended.
MCLG	Maximum Contaminant Level Goal
MRDL	Maximum Residual Disinfectant Level
MRDLG	Maximum Residual Disinfectant Level Goal
AL	Action Level
MCL	Maximum Contaminant Level
TT	Treatment Technique

TT Violation	Explanation	Length	Health Effects Language	Explanation and Comment
Surface water treatment rule filtration and disinfection violations	<p><u>Chlorine</u> On September 24, entry point Chlorine residual was recorded at 0.010 mg/L which is below the minimum EPA MCL requirement of 0.020 mg/L, and below the ADEC MCL of 0.040 mg/L, which triggered an MCL violation and a Treatment Technique violation.</p> <p><u>Turbidity</u> We received two Treatment Technique violations for Turbidity, one in January and another in September. We are required to have a minimum of 95% of the monthly Turbidity values under 0.3NTU. In January; we did not meet this requirement, as only 94% were under the 0.3 NTU. In September, we exceeded the maximum allowed Turbidity of 1.49 NTU.</p> <p>The January Treatment Technique violation for Turbidity was caused by a broken under drain pipe in Filter #1</p>	<p>For Chlorine, we returned to compliance in October by having no Chlorine residual reading below the required levels.</p> <p>For Turbidity, we returned to compliance in February for the January Treatment Technique violation, and we returned to compliance in October for the September Treatment Technique violation.</p>	<p>Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.</p>	<p>The Chlorine and Turbidity violation in January was solved by repairing a broken pipe in Filter #1 and installing new media. In September we repaired a faulty aluminum sulfate chemical feed pump. We maintained chlorine residuals at the appropriate levels.</p>

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Though the risks to the City of Craig's surface water source are high based on federal standards, the water from your tap is safe to drink. The treated water consistently meets drinking water quality standards. As part of our ongoing efforts to ensure high drinking water quality, the City of Craig is currently working with Alaska Rural Water Association to update the city's Source Water Protection Plan.

For more information please contact:

Contact Name: Russell Dill
Address: PO Box 725
Craig, AK 99921
Phone: 907-826-3275