



Arapahoe County Water and Wastewater Authority  
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## Arapahoe County Water and Wastewater Authority 2019 Drinking Water Quality Report for Calendar Year 2018

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*Public Water System ID:* CO0203002

**Esta es información importante. Si no la pueden leer, necesitan que alguien se la traduzca.**

We are pleased to present to you this year's water quality report. Our constant goal is to provide you with a safe and dependable supply of drinking water. Please contact STEVE WITTER at 303-790-4830 with any questions about the drinking Consumer Confidence Report (CCR) or for public participation opportunities that may affect the water quality.

### General Information

All 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791) or by visiting <http://water.epa.gov/drink/contaminants>.

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 of infections. These people should seek advice about drinking water from their health care providers. For more information about contaminants and potential health effects, or to receive a copy of the U.S. Environmental Protection Agency (EPA) and the U.S. Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and microbiological contaminants call the EPA Safe Drinking Water Hotline at (1-800-426-4791).

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. Contaminants that may be present in source water include:

- **Microbial contaminants:** viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;
- **Inorganic contaminants:** 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:** may come from a variety of sources, such as agriculture, urban stormwater runoff, and residential uses;
- **Radioactive contaminants:** can be naturally occurring or be the result of oil and gas production and mining activities; and
- **Organic chemical contaminants:** including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and also may come from gas stations, urban storm water runoff, and septic systems.

In order to ensure that tap water is safe to drink, the Colorado Department of Public Health and Environment prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

**ACWWA’s Drinking Water Sources**

Arapahoe County Water and Wastewater Authority (ACWWA) customers receive water from a combination of sources. These sources include:

- Groundwater from shallow aquifers – renewable water source from the Cherry Creek Alluvial Aquifer;
- Groundwater from Deep aquifers – non-renewable water source mostly from the Denver and Arapahoe Formations of the Denver Basin;
- Joint Water Purification Plant (JWPP) – collaboration effort with Cottonwood Water and Sanitation District that treats groundwater from shallow (alluvial) aquifers. The plant anticipates the need for an additional level of treatment that will be required with continued use of water from the Cherry Creek Alluvial Aquifer.
- ACWWA Flow Project – collaboration effort with East Cherry Creek Valley Water and Sanitation District (ECCV) and United Water and Sanitation District. The Project is currently in its first phase which water from ECCV’s deep water well field is brought into the ACWWA service area. ACWWA’s rights to the surface water referenced in the table are exchanged for use of this water so no surface water is used in the ACWWA distribution system at this time.

The table on the right, “ACWWA’s Water Sources,” details which water sources were used in 2016.

**Source Water Assessment and Protection (SWAP)**

The Colorado Department of Public Health and Environment has provided us with a Source Water Assessment Report for our water supply. For general information or to obtain a copy of the report please visit <http://wqcdcompliance.com/ccr>. The report is located under “Source Water Assessment Reports,” and then “Assessment Report by County.” Select ARAPAHOE County and find “203002arapahoectywwwagw” or by contacting STEVE WITTER at 303-790-4830. The Source Water Assessment Report provides a screening-level evaluation of potential contamination that **could** occur. It **does not** mean that the contamination **has or will** occur. We can use this information to evaluate the need to improve our current water treatment capabilities and prepare for future contamination threats. This can help us ensure that quality finished water is delivered to your homes. In addition, the source water assessment results provide a starting point for developing a source water protection plan. Potential sources of contamination in our source water area are listed in the table on the right, (ACWWA’s Water Sources.)

Please contact us to learn more about what you can do to help protect your drinking water sources, any questions about the Drinking Water Consumer Confidence Report, to learn more about our system, or to attend scheduled public meetings. We want you, our valued customers, to be informed about the services we provide and the quality water we deliver to you every day.

ACWWA’s Water Sources			
System ID	Source	Description	Potential Source(s) of Contamination
ECCV	PURCHASED WATER FROM CO0103035	Delivered from the ACWWA Flow project in collaboration with ECCV	CDPHE has provided ECCV with a Source Water Assessment Report for the District’s water supply. You may obtain a copy of the report by visiting <a href="http://www.cdphe.state.co.us/wq/sw/swapom.html">www.cdphe.state.co.us/wq/sw/swapom.html</a> or by contacting ECCV at 303-693-3800 ext 228.
ACWWA	BRAUN	Shallow (Alluvial) Groundwater Well	Above/Below Storage Tanks, Transportation, Septic Systems, Hay, High Intensity Res. Manufacturing Facilities, Road Miles, Row Crops, Pasture, Painting, Hazard Waste Generators, Forest.
	SMITH 2	Shallow (Alluvial) Groundwater Well	
	CA2	Deep Groundwater Well	
	CD2R	Deep Groundwater Well	
	LOYD	Shallow (Alluvial) Groundwater Well	
	DENMARK ARAPAHOE	Deep Groundwater Well	
	AIRPORT 3	Deep Groundwater Well	
	A2	Deep Groundwater Well	
A1	Deep Groundwater Well		
JWPP	PURCHASED FROM JWPP CO0103418	Water from the JWPP Collaboration with CWSD	

## Terms and Abbreviations

- **Maximum Contaminant Level (MCL)** – the highest level of a contaminant allowed in drinking water.
- **Treatment Technique (TT)** – a required process intended to reduce the level of a contaminant in drinking water.
- **Action Level (AL)** – the concentration of a contaminant which, if exceeded, triggers treatment and other regulatory requirements.
- **Maximum Residual Disinfectant Level (MRDL)** – 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.
- **Maximum Contaminant Level Goal (MCLG)** – 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.
- **Maximum Residual Disinfectant Level Goal (MRDLG)** – 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.
- **Violation (No Abbreviation)** – Failure to meet a Colorado Primary Drinking Water Regulation.
- **Formal Enforcement Action (No Abbreviation)** – Escalated action taken by the State (due to the risk to public health, or number or severity of violations) to bring a non-compliant water system back into compliance.
- **Variance and Exemptions (V/E)** – Department permission not to meet a MCL or treatment technique under certain conditions.
- **Gross Alpha (No Abbreviation)** – Gross alpha particle activity compliance value. It includes radium-226, but excludes radon 222, and uranium.
- **Picocuries per liter (pCi/L)** – Measure of the radioactivity in water.
- **Nephelometric Turbidity Unit (NTU)** – Measure of the clarity or cloudiness of water. Turbidity in excess of 5 NTU is just noticeable to the typical person.
- **Compliance Value (No Abbreviation)** – Single or calculated value used to determine if regulatory contaminant level (e.g. MCL) is met. Examples of calculated values are the 90<sup>th</sup> Percentile, Running Annual Average (RAA) and Locational Running Annual Average (LRAA).
- **Average (x-bar)** – Typical value.
- **Range (R)** – Lowest value to the highest value.
- **(br)**- Below the reportable level for an analysis; the reportable level is the lowest reliable level that can be measured.
- **Sample Size (n)** – Number or count of values (i.e. number of water samples collected).
- **Parts per million = Milligrams per liter (ppm = mg/L)** – One part per million corresponds to one minute in two years or a single penny in \$10,000.
- **Parts per billion = Micrograms per liter (ppb = ug/L)** – One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.
- **Not Applicable (N/A)** – Does not apply or not available.

### Detected Contaminants in the ACWWA System

ACWWA, ECCV, and the JWPP routinely monitor for contaminants in your drinking water according to Federal and State laws. The following table(s) show all detections found in the period of January 1 to December 31, 2018 unless otherwise noted. The State of Colorado requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. Therefore, some of our data, though representative, may be more than one-year-old. Violations and Formal Enforcement Actions, if any, are reported in the next section of this report.

**Note:** Only detected contaminants sampled within the last 5 years appear in this report. If no tables appear in this section, then no contaminants were detected in the last round of monitoring.

<b>Disinfectants Sampled in the Distribution System</b> <b>TT Requirement:</b> At least 95% of samples per period (month or quarter) must be at least 0.2 ppm <b>OR</b> If sample size is less than 40 no more than 1 sample is below 0.2 ppm <b>Typical Sources:</b> Water additive used to control microbes							
System ID	Disinfectant Name	Time Period	Results	Number of Samples Below Level	Sample Size	TT Violation	MRDL
ACWWA	Chlorine	December, 2018	Lowest period percentage of samples meeting TT requirement: 100%	0	30	No	4.0 ppm

Microbiological Contaminants in the Distribution System						
System ID	Contaminant Name	Highest % of Positive Samples	MCL	MCLG	Violation	Typical Sources
ACWWA	Coliform (TCR)	0%	Less than 5% positive each	0	No	Naturally present in the environment
ECCV	Coliform (TCR)	0%	Less than 5% positive each	0	No	Naturally present in the environment

Lead and Copper Sampled in the Distribution System									
System ID	Contaminant Name	Time Period	90 <sup>th</sup> Percentile	Sample Size	Unit of Measure	90 <sup>th</sup> Percentile AL	Sample Sites Above AL	90 <sup>th</sup> Percentile AL Exceedance	Typical Sources
ACWWA	Lead	Sept '18	3.3	30	ppb	15	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
	Copper	Sept '18	0.1	30	ppm	1.3	0	No	
ECCV	Lead	Feb-June '18	1	62	ppb	15	0	No	
	Copper	Feb-June '18	0.08	62	ppm	1.3	0	No	
	Lead	Aug-Dec '18	1	60	ppb	15	0	No	
	Copper	Aug-Dec '18	0.07	60	ppm	1.3	0	No	

### Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems (especially for pregnant women and young children). It is possible that lead levels at your home may be higher than other homes in the community as a result of materials used in your home's plumbing. If you are concerned about lead in your water, you may wish to have your water tested. 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. Additional information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

Disinfection Byproducts Sampled in the Distribution System									
System ID	Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCL Violation	Typical Sources
ACWWA	Total Haloacetic Acids (HAA5)	2018	9.45	8.2 to 10.7	2	ppb	60	No	Byproduct of drinking water disinfection
ECCV	Total Haloacetic Acids (HAA5)	2018	9.75	0 to 18.86	32	ppb	60	No	
ACWWA	Total Trihalomethanes (TTHM)	2018	43.8	39.9 to 47.7	2	ppb	80	No	
ECCV	Total Trihalomethanes (TTHM)	2018	36.16	0 to 61	32	ppb	80	No	

Radionuclides Sampled at the Entry Point to the Distribution System										
System ID	Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources
ACWWA	Gross Alpha	2016	2.17	1.18 to 3.17	2	pCi/L	15	0	No	Erosion of natural deposits
ECCV	Gross Alpha	2014	3.2	3.2 to 3.2	1	pCi/L	15	0	No	
JWPP	Gross Alpha	2018	6.6	3.61 to 10.94	3	pCi/L	15	0	No	
ACWWA	Combined Radium	2012	1.62	0.7 to 2.4	9	pCi/L	5	0	No	
ECCV	Combined Radium	2012	0.71	0 to 2.5	14	pCi/L	5	0	No	
JWPP	Combined Radium	2014	1.1	1.1 to 1.1	1	pCi/L	5	0	No	
ACWWA	Combined Uranium	2016	8.96	8.61 to 9.32	2	ppb	30	0	No	
ECCV	Combined Uranium	2014	2.2	2.2 to 2.2	1	ppb	30	0	No	
JWPP	Combined Uranium	2018	21	17 to 27	4	ppb	30	0	No	

Inorganic Contaminants Sampled at the Entry Point to the Distribution System										
System ID	Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources
ACWWA	Arsenic	2016	1.6	0 to 4	5	ppb	10	0	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
ECCV	Arsenic	2018	0.14	0 to 1	7	ppb	10	0	No	
ACWWA	Barium	2016	0.18	0.11 to 0.31	5	ppm	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
ECCV	Barium	2018	0.08	0.02 to 0.16	7	ppm	2	2	No	
JWPP	Barium	2014	0.19	0.19 to 0.19	1	ppm	2	2	No	
ACWWA	Fluoride	2015	0.78	0.25 to 1.3	5	ppm	4	4	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
ECCV	Fluoride	2018	1.01	0.05 to 1.2	7	ppm	4	4	No	
JWPP	Fluoride	2014	0.54	0.54 to 0.54	1	ppm	4	4	No	
ACWWA	Nitrate	2018	0.22	0 to 1.55	7	ppm	10	10	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
ECCV	Nitrate	2018	0.25	0 to 1.8	12	ppm	10	10	No	
JWPP	Nitrate	2018	4.25	4.1 to 4.4	4	ppm	10	10	No	
ACWWA	Nitrate-Nitrite	2015	1.5	1.5 to 1.5	1	ppm	10	10	No	
ECCV	Nitrate-Nitrite	2015	0.7	0.7 to 0.7	1	ppm	10	10	No	

Continued Inorganic Contaminants Sampled at the Entry Point to the Distribution System										
ACWWA	Selenium	2014	0.65	br to 1.3	2	ppb	50	50	No	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
ECCV	Selenium	2014	1	br to 1	13	ppb	50	50	No	
JWPP	Selenium	2014	18	18 to 18	1	ppb	50	50	No	
ECCV	Chromium	2017	2	2 to 2	1	ppb	100	100	No	Discharge from steel and pulp mills; erosion of natural deposits

Unregulated or Secondary Contaminants*							
*Secondary standards are <u>non-enforceable</u> guidelines for contaminants that may cause cosmetic effects (such as skin, or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water.							
System ID	Contaminant Name	Year	Average	Range Low-High	Sample Size	Unit of Measure	Secondary Standard
ACWWA	Total Dissolved Solids	2014	392	392 to 392	1	ppm	500
ECCV	Total Dissolved Solids	2016	267.1	130 to 409		ppm	500
JWPP	Total Dissolved Solids	2018	818	778 to 840	4	ppm	500
ECCV	Iron	2016	0.05	0 to 0.49		ppb	3
ECCV	Manganese	2016	0.03	0 to 0.77		ppb	5
ECCV	Nickel	2014	0.001	0.001 to 0.001	1	ppm	n/a
ACWWA	Sodium	2016	51.66	29.5 to 76.2	5	ppm	n/a
ECCV	Sodium	2018	46.4	34.1 to 61.1	7	ppm	n/a
JWPP	Sodium	2014	79.2	79.2 to 79.2	1	ppm	n/a

**Violations, Significant Deficiencies, and Formal Enforcement Actions**

<b>Violations</b>						
System ID	Name	Category	Time Period	Health Effects	Compliance Value	TT Level or MCL
ACWWA	PLANS AND SPECIFICATION RULE	STATE MONITORING- NON-HEALTH-BASED	05/05/2016 – 08/06/2018	N/A	N/A	N/A
<b>Additional Violation Information</b>						
<p>R540 - DESIGN APPROVAL: ACWWA had not received plans and specifications approval by the Department prior to construction of renovations to ACWWA's water system, specifically the Denmark well, which potentially included the addition of new sources, modifications of treatment and/or the addition of storage tanks. This is an alleged violation of CPDWR Regulation 11, Section 11.4(1).</p>						
<p>EXPLANATION OF THE DEFICIENCIE R540 – DESIGN SPPROVAL AND THE STEPS TAKEN TO CORRECT THEM - ACWWA was in violation of a State Monitoring (non-health based) regulation, by not submitting the R540-DESIGN APPROVAL for the Denmark well to the State of Colorado. ACWWA failed to submit plans and specs for approval when it planned to complete renovations to the Denmark well site, including the addition of new water sources, changes in water treatment and/or changes in the distribution system. This is a violation of CPDWR 1.1. The oversight and subsequent violation was first discovered on 05/05/2016 and ACWWA is still awaiting approval of the plans and specs. There are no adverse health effects from this violation and none of the population is at risk as a result of this violation. Because there are no health effects, no alternative water supply is necessary and there is no action consumers should take regarding seeking medical help. Since it was made known to ACWWA that we were in violation, ACWWA has applied for Design Approval for modification to the Denmark well and is awaiting said approval. Once Design Approval is received from the State, the situation will be returned to full compliance. If you are the manager of a multi-family housing complex or have tenants in a home or business located in ACWWA's service district, please be sure they have access to this report. If you have any further questions regarding this violation, please feel free to contact Steve Witter, General Manager of ACWWA at 303-790-4830.</p>						
<p>IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER Joint Water Purification Plant (JWPP) - Had the following Violations Identified During a Drinking Water Inspection:            Our water system recently violated a drinking water requirement. Although this situation is not an emergency, as our customers you have a right to know what happened, what you should do, and what we are doing to correct this situation.            A routine drinking water inspection conducted on April 26, 2017 by the state drinking water program identified the following violations that may pose a risk to public health.            What does this mean? What should I do?            o There is nothing you need to do at this time. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.            We anticipate resolving the problem by Problem was resolved before September 22, 2017. For more information, please contact Steve Witter at switter@acwwa.com or (303)790-4830, or 13031 E. Caley Ave Centennial, CO 80111.            *Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail. *</p>						