

# Pueblo Water 2017 Water Quality Report

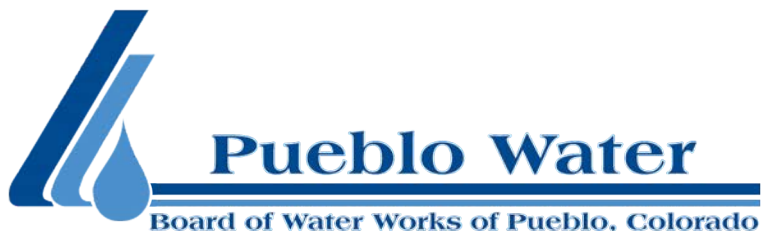
For calendar year 2016

A report regarding the quality of water provided by the Board of Water Works of Pueblo, Colorado during 2016.  
Board of Water Works of Pueblo, Colorado  
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*Public Water System ID #CO0151500*

Este reporte demuestra a nuestros clientes la calidad del agua, que el Board of Water Works of Pueblo, sirvió a su comunidad durante el año 2016.  
Si tiene alguna pregunta sobre éste reporte, llame a 719-584-0250, durante las horas de trabajo.





## Pueblo Board of Water Works 2017 Drinking Water Quality Report for Calendar Year 2016

Public Water System ID: CO0151500

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

### 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 at (1-800-426-4791) or visiting the website at: <https://www.epa.gov/dwstandardsregulations>.

Some people may be more vulnerable to contaminants in drinking water than is 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.

- **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.

#### 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 Lead Information Center (1-800-424-5323) or at <http://www.epa.gov/safewater/lead>.

[www.pueblowater.org](http://www.pueblowater.org)

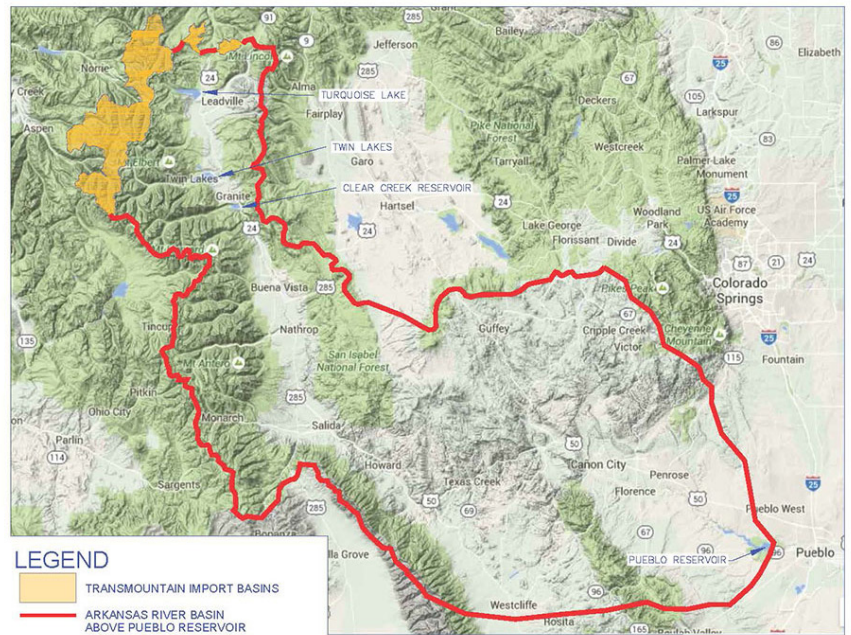


## Source Water Assessment and Protection (SWAP)

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 PUEBLO County and find 151500; PUEBLO BOARD OF WW or by contacting DON COLALANCIA at 719-584-0265. 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 assessment results will be used to develop a Source Water Protection Plan (SWPP) starting in 2017. Potential sources of contamination in our source water area are listed on page 5 of this report.

Please contact us to learn more about what you can do to help protect your drinking water sources, any questions about the Drinking Water Quality 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.



Source map for Pueblo Water



Sedimentation basin and storage tanks at Whitlock Water Treatment Plant

## Our Water Treatment Process

Raw water is brought to the Whitlock Treatment Plant via a pipeline from Pueblo Reservoir. The treatment process begins with the addition of activated carbon to remove organic and taste and odor compounds. Bacteria, viruses and other biological contaminants are inactivated using chlorine and ammonia in the disinfection process. Alum and polymers (designed specifically for drinking water treatment) are added to start the coagulation process which removes suspended particulate contaminants and produces clarified water.

The clarified water is brought into our filter plant where it passes through layers of fine granulated anthracite coal and sand, producing a clear, turbidity-free water. Fluoride occurs naturally in our water, but a small amount of fluoride is also added to the filtered water as necessary to meet state drinking water standards. Finally, the high quality drinking water is pumped from the treatment plant and reaches you through the distribution system.

Quality through the treatment processes is monitored on a twenty-four hour schedule by our Whitlock Treatment Plant operators. Our certified Water Quality Laboratory conducts additional analyses on the drinking water our customers receive to ensure that all state and federal water quality standards are met.

## Water - we treat it right!

The Board of Water Works of Pueblo is proud to present our annual report on the quality of the water we deliver to you. Our mission statement says that we are “committed to providing the highest quality of water at the lowest possible cost.” So it has been for over 140 years of operation, and so it shall continue to be. We constantly work to produce drinking water that meets or exceeds all state and federal drinking water standards. At the same time, we have managed to keep Pueblo’s rates for water well below average for Front Range cities.

## Where does our water come from?



Pueblo’s drinking water comes from rivers, lakes, streams, reservoirs and springs fed primarily by high-quality mountain snow runoff. Pueblo Water’s supply is 100 percent surface water that originates from a 4,845 square mile drainage area on both sides of the Continental Divide.

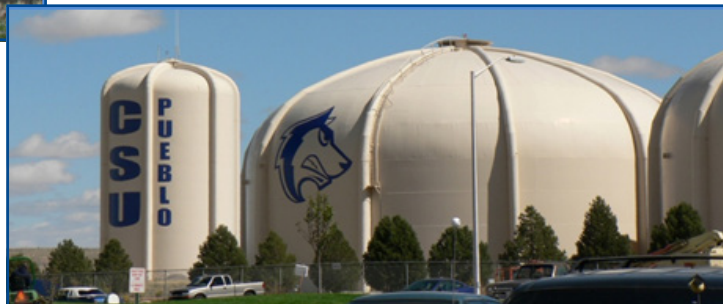
Pueblo’s water sources are the Arkansas River and its tributaries above Pueblo Reservoir and water imported across the Continental Divide from the headwaters of the Roaring Fork, Fryingpan, and Eagle Rivers. (Please see source map for Pueblo Water on previous page.)



Pueblo stores its source water in four reservoirs — Pueblo, Clear Creek, Twin Lakes and Turquoise. Pueblo Reservoir is the terminal storage reservoir and water is delivered by pipeline from Pueblo Dam to the Whitlock Water Treatment Plant.



After treatment, drinking water is moved via pump stations to our water storage tanks for reliable delivery to Pueblo homes and businesses.





## Our Water Sources

<u>Source</u>	<u>Source Type</u>	<u>Water Type</u>	<u>Potential Source(s) of Contamination</u>
PUEBLO RESERVOIR	Intake	Surface Water	Please see the statement below detailing potential sources of contamination for our source water.
ARKANSAS RIVER INTAKE 2	Intake	Surface Water	Please see the statement below detailing potential sources of contamination for our source water.
ARKANSAS RIVER INTAKE 1	Intake	Surface Water	Please see the statement below detailing potential sources of contamination for our source water.

## 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 PUEBLO County and find 151500; PUEBLO BOARD OF WW. For more information on the report contact the Colorado Department of Public Health and Environment by calling 303-692-2000. The Source Water Assessment Report provides a screening-level evaluation for contaminants that could reach waterways in Pueblo’s watershed or the Pueblo Reservoir. It ***does not*** mean that the contamination ***has or will*** occur.


The potential sources of contamination that may exist are: EPA Areas of Concern (Superfund Sites, Abandoned Contaminated Sites, Hazardous Waste Generators and Chemical Inventory Sites); Permitted Wastewater Discharge Sites; Aboveground, Underground and Leaking Storage Tank Sites; Solid Waste Sites; Existing/ Abandoned Mine Sites; Concentrated Animal Feeding Operations and Other Facilities.

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 provided a starting point for developing a source water protection plan which should be completed in 2017.

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.



## 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.
  - **Health-Based** – A violation of either a MCL or TT.
  - **Non-Health-Based** – A violation that is not a MCL or TT.
  - **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.
  - **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.
  - **Level 1 Assessment** – A study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
  - **Level 2 Assessment** – A very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.
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## Detected Contaminants

PUEBLO BOARD OF WW routinely monitors 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, 2016 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 <i>OR</i> 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						
Contaminant Name	Time Period	Results	Number of Samples Below Level	Sample Size	TT Violation	MRDL
Chloramine	11/1/16 – 11/30/16	<u>Lowest period</u> percentage of samples meeting TT requirement: 96.45%	7	197	No	4.0 ppm

<b>Microorganism Contaminants Sampled in the Distribution System</b>							
Contaminant Name	Time Period	Results	Sample Size	MCL	MCLG	MCL Violation	Typical Sources
Coliform (TCR)	Nov	0.98%	204	More than 5.0% positive samples per period	0	No	Naturally present in the environment

<b>Lead and Copper Sampled in the Distribution System</b>								
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
Copper	6/3/14 – 8/5/14	0.27	50	ppm	1.3		No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead	6/3/14 – 8/5/14	9.3	50	ppb	15	1	No	Corrosion of household plumbing systems; Erosion of natural deposits



Disinfection Byproducts Sampled in the Distribution System										
Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	Highest Compliance Value	MCL Violation	Typical Sources
Total Haloacetic Acids (HAA5)	2016	13.9	6.3 - 31.5	16	ppb	60	N/A	31.5	No	Byproduct of drinking water disinfection
Total Trihalomethanes (TTHM)	2016	8.68	4.20 - 17.3	16	ppb	80	N/A	17.3	No	Byproduct of drinking water disinfection

Total Organic Carbon (Disinfection Byproducts Precursor) Removal Ratio of Raw and Finished Water								
Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	TT Minimum Ratio	TT Violation	Typical Sources
Total Organic Carbon Ratio	2016	0.97	0.67 - 1.38	12	Ratio	1.00	No	Naturally present in the environment
*If minimum ratio not met and no violation identified then the system achieved compliance using alternative criteria.								

Disinfectants Sampled at the Entry Point to the Distribution System							
Contaminant Name	Year	Number of Samples Above or Below Level	Sample Size	TT/MRDL Requirement	TT/MRDL Violation	Typical Sources	
Chlorine/Chloramine	2016	0	2930	TT = No more than 4 hours with a sample below 0.2 MG/L	No	Water additive used to control microbes	

Summary of Turbidity Sampled at the Entry Point to the Distribution System					
Contaminant Name	Monitoring Period	Level Found	TT Requirement	TT Violation	Typical Sources
Turbidity	August	Highest single measurement: 0.12 NTU	Maximum 1 NTU for any single measurement	No	Soil Runoff
Turbidity	December	Lowest monthly percentage of samples meeting TT requirement for our technology: 100 %	In any month, at least 95% of samples must be less than 0.3 NTU	No	Soil Runoff





**Radionuclides Sampled at the Entry Point to the Distribution System**

Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources
Gross Alpha	2014	1.23	1.23	1	pCi/L	15	0	No	Erosion of natural deposits
Combined Radium	2012	0.35	0.3 - 0.4	2	pCi/L	5	0	No	Erosion of natural deposits
Combined Uranium	2014	1.9	1.9	1	ppb	30	0	No	Erosion of natural deposits

**Inorganic Contaminants Sampled at the Entry Point to the Distribution System**

Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources
Barium	2016	0.05	0.05	1	ppm	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium	2016	1.37	1.37	1	ppb	100	100	No	Discharge from steel and pulp mills; erosion of natural deposits
Fluoride	2014	0.75	0.75	1	ppm	4	4	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate	2016	0.22	0.22	1	ppm	10	10	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium	2016	4.11	4.11	1	ppb	50	50	No	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines



### Cryptosporidium and Raw Source Water E. coli

Contaminant Name	Year	Number of Positives	Sample Size
E. Coli	2016	6	12

### Secondary Contaminants\*\*

\*\*Secondary standards are non-enforceable 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.

Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	Secondary Standard
Sodium	2016	16.8	16.8	1	ppm	N/A
Total Dissolved Solids	2012	246	242 to 250	2	ppm	500

### Unregulated Contaminants\*\*\*

EPA has implemented the Unregulated Contaminant Monitoring Rule (UCMR) to collect data for contaminants that are suspected to be present in drinking water and do not have health-based standards set under the Safe Drinking Water Act. EPA uses the results of UCMR monitoring to learn about the occurrence of unregulated contaminants in drinking water and to decide whether or not these contaminants will be regulated in the future. We performed monitoring and reported the analytical results of the monitoring to EPA in accordance with its Third Unregulated Contaminant Monitoring Rule (UCMR3). Once EPA reviews the submitted results, the results are made available in the EPA's National Contaminant Occurrence Database (NCOD) (<http://www.epa.gov/dwucmr/national-contaminant-occurrence-database-ncod>) Consumers can review UCMR results by accessing the NCOD. Contaminants that were detected during our UCMR3 sampling and the corresponding analytical results are provided below.

Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure
Molybdenum <sup>^</sup>	2013	5.3	5.2 – 5.5	4	ppb
Strontium <sup>^</sup>	2013	495	450 – 550	4	ppb
Vanadium <sup>^</sup>	2013	0.7	0.6 – 1.0	4	ppb
Chromium-6 <sup>^</sup>	2013	0.05	<0.03 – 0.07	4	ppb
Molybdenum	2013	5.2	4.7 – 5.5	4	ppb
Strontium	2013	478	450 – 520	4	ppb
Vanadium	2013	0.7	0.5 – 1.1	4	ppb
Chromium-6	2013	<0.03	<0.03 – 0.09	4	ppb

<sup>^</sup> Samples collected from the distribution system.

\*\*\*More information about the contaminants that were included in UCMR3 monitoring can be found at:

<https://www.epa.gov/dwucmr/third-unregulated-contaminant-monitoring-rule>.

Additional drinking water information can be obtained by calling the Safe Drinking Water Hotline (800-426-4791) or on the web at:

<https://www.epa.gov/ground-water-and-drinking-water/safe-drinking-water-hotline>.

**Violations, Significant Deficiencies, Backflow/Cross-Connection, and Formal Enforcement Actions**

**No Violations or Formal Enforcement Actions**





# Clear Creek Reservoir

