



2016 Water Quality Report

We are pleased to present this year's water quality report for the 2015 calendar year. Our goal is to provide you with a safe and dependable supply of drinking water.





Lead Testing in Castle Rock

Castle Rock Water meets all the regulatory standards set by the Colorado Department of Public Health and Environment and the U.S. Environment Protection Agency. We are required to conduct frequent and routine water quality testing to ensure your water stays safe. Testing is conducted for the presence of lead as well as many other possible contaminants.

You may have heard of some cities in the United States having issues with lead in their water. However, Castle Rock does not have any such issues. Lead enters the water through contact with plumbing pipes and fixtures within the home. It does this by leaching lead and copper from your private plumbing through the corrosion of pipes, solder, faucets and fittings. As part of our treatment process Castle Rock Water treats the water to minimize, reduce and eliminate to the extent possible the potential for this corrosion to occur.

Castle Rock Water is required by state and federal regulations to conduct periodic lead and copper testing. Samples are collected from indoor taps in designated single family homes built before 1960 and between 1982 - 1986. These homes have been identified because they were built during the timeframe when lead-based solder was more widely used. Since Castle Rock started this sampling in 1992, there have been no elevated levels of either lead or copper from the samples collected.

If you have any concerns, or would like your home to be considered for lead testing, contact our Water Quality Technician at 720-733-6091 or visit CRgov.com/waterquality. This test is performed at no cost to the homeowner.

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>.

Lead and Copper (sampled in the distribution system)

Contaminant Name (unit of measure)	Time Period	90th Percentile	Sample Size	90th Percentile AL	Sample Sites Above AL	90th Percentile AL Exceedance	Typical Sources
Copper (ppm)	6/22/2015 to 7/14/2015	0.16	30	1.3	0	No	Corrosion of household plumbing systems; erosion of natural desposits.
Lead (ppm)	6/22/2015 to 7/14/2015	0.0024	30	15	0	No	Corrosion of household plumbing systems; erosion of natural desposits.

General Information About Drinking Water

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 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. 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 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 other 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 materials, 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, agriculture 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 stormwater 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.

Violations, Significant Deficiencies and Formal Enforcement Action

THERE WERE NO SIGNIFICANT DEFICIENCIES OR FORMAL ENFORCEMENT ACTION FOR 2015.

Note: If any violation relates to failing to install adequate filtration or disinfection equipment or processes, or have had a failure of such equipment or processes then the water may be inadequately treated. Inadequately treated water may contain disease-causing organisms. These organisms included bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.



Terms and Abbreviations

The following definitions will help you understand the terms and abbreviations used in this report.

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment and other regulatory requirements.

Average (x-bar): Typical value.

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 90th Percentile, Running Annual Average (RAA) and Locational Running Annual Average (LRAA).

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.

Gross Alpha (no abbreviation): Gross alpha particle activity compliance value. It includes radium-226, but excludes radon 222 and uranium.

Maximum Contaminant Level (MCL): The highest level of a contaminant allowed in drinking water.

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 (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 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.

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.

Not Applicable (N/A): Does not apply or not available.

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.

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.

Picocuries per liter (pCi/L): Measure of the radioactivity in water.

Range (R): Lowest value to the highest value.

Sample Size (n): Number or count of values (i.e. number of water samples collected).

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Variance and Exemptions (V/E): Department permission not to meet a MCL or a treatment technique under certain conditions.

Violation (no abbreviation): Failure to meet a Colorado Primary Drinking Water Regulation.

Source Water Assessment and Protection

The Colorado Department of Public Health and Environment (CDPHE) 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 <https://www.colorado.gov/pacific/cdphe/source-water-assessment-and-protection-swap>. The report is located under "Source Water Assessment Reports", and then "Assessment Report by County". Select Douglas County, and find 118010 - Castle Rock, Town Of. You may also receive a copy of the report by contacting Water Operations staff at 720-733-6000.

The Source Water Assessment 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 the 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 on the next pages.

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 water 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.

Questions or Comments

Please contact Water Operations staff at 720-733-6000 with any questions about the Drinking Water Confidence Rule (CCR) or for public participation opportunities that may affect the water quality. Utilities Commission meetings are held the fourth Wednesday of each month, 6 p.m., Castle Rock Water O&M Center, Building #183, 175 Kellogg Ct., Castle Rock.

All issues concerning water quality: waterquality@CRgov.com or 720-733-6000.

Web site: CRgov.com/WaterQuality

Report a water emergency: 720-733-6000 from 8 a.m. to 5 p.m. or 303-663-6100 all other times.

EPA Hotline: More information concerning 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>.

Detected Contaminants

The Town of Castle Rock 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, 2015, 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 five years appear in this report. If no tables appear in this section then no contaminants were detected in the last round of monitoring.

Microorganism Contaminants (sampled in the distribution system)

Contaminant Name (unit of measure)	Unit of Measure	Sample Frequency	Results	MCL	MCLG	MCL Violation	Typical Source
Total Coliform (TCR)	Absent or present	Monthly (60 samples per month)	All TCR samples for 2015 were absent for total coliform	No more than 5.0% positives samples per period (if sample size is greater than or equal to 40) OR No more than 1 positive sample per period (if sample size is less than 40)	0	No	Naturally present in the environment

Disinfection Byproducts (sampled in the distribution system)

Name (unit of measure)	Year	Average	Range Low - High	Sample Size	MCL	MCLG	MCL Violation	Typical Source
Total Trihalomethanes (TTHM) (ppb)	2015	3.38	0.57 to 12.19	32	80	N/A	No	Byproduct of drinking water disinfection.
Total Haloacetic Acids (HAA5) (ppb)	2015	0.69	0 to 1.7	32	60	N/A	No	Byproduct of drinking water disinfection.

Radionuclides (sampled at the entry point to the distribution system)

Contaminant Name (unit of measure)	Year	Average	Range Low - High	Sample Size	MCL	MCLG	MCL Violation	Typical Source
Gross Alpha (pCiL)	2014	2	0 to 4	5	15	0	No	Erosion of natural deposits.
Combined Radium (pCiL)	2014	2.3	1.5 to 4.4	7	5	0	No	Erosion of natural deposits.
Gross Beta Particle Activity (pCiL*)	2014	3.4	0 to 7	5	50	0	No	Decay of natural and man-made deposits.

* The MCL for Gross Beta Particle Activity is 4 mrem/year. Since there is no simple conversion between mrem/year and pCi/L the EPA considers 50 pCi/L to be the level of concern for Gross Beta Particle Activity.

This is the most recent data (results are from 2014). Radionuclides are typically on a 9-year schedule, and 2014 is the most recent data.

Summary of Turbidity (sampled at the entry point to the distribution system)

Contaminant Name	Sample Date/ Month	Level Found	TT Requirement	TT Violation	Typical Sources
Turbidity	Jun.	Highest single measurement: 0.05 NTU	Maximum 0.5 NTU for any single measurement	No	Soil runoff.
Turbidity	Dec.	Lowest monthly percentage of samples meeting TT requirement for our technology: 100%	In any month, at least 95% of samples must be less than 0.1 NTU	No	Soil runoff.

Unregulated Contaminants * * *

Contaminant Name (unit of measure)	Year	Average	Range Low - High
Chlorate (ug/L (PPB))	2015	260	190 - 340
Chromium (ug/L (PPB))	2015	0.46	0.21 - 1
Chromium, Hexavalent (ug/L (PPB))	2015	0.29	0.03 - 0.92
Molybdenum (ug/L (PPB))	2015	1	1
Strontium (ug/L (PPB))	2015	431	360 - 490

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 used 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>). Contaminants that were detected during our UCMR3 sampling and the corresponding analytical results are provided in the table above.

*** More information about the contaminants that were included in UCMR3 monitoring can be found at <http://www.drinktap.org/water-info/whats-in-my-water/unregulated-contaminant-monitoring-rule.aspx>.

Learn more about the EPA UCMR3 at: <http://www.epa.gov/dwucmr/learn-about-unregulated-contaminant-monitoring-rule.aspx> or contact the Safe Drinking Water Hotline at (800)426-4791 or <http://water.epa.gov/drink/contact.cfm>.

Inorganic Contaminants (sampled at the entry point to the distribution system)

Contaminant Name (unit of measure)	Year	Average	Range Low - High	Sample Size	MCL	MCLG	MCL Violation	Typical Source
Barium (ppm)	2015	0.17	0.17 to 0.17	1	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Flouride (ppm)*	2015	0.8	0.8 to 0.8	1	4	4	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Nitrate (ppm)	2015	0.09	0 to 0.19	4	10	10	No	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits.

* Note: Unlike some water providers Castle Rock does not add flouride to our water.

Our Water Sources

Source	Source Type	Water Type	Source	Source Type	Water Type
Well 117	Well	GW	Well CR117 CS1A	Well	GW
Well CR101 CS1D	Well	GW	Well 28R Meadows A-2R	Well	GW
Well CR217	Well	GW	Well CR218	Well	GW
Well 12R Miller No 2	Well	GW	Well CR83	Well	GW
Well CR86	Well	GW	Well CR51A Meadows D-7A	Well	GW
Well 219 A13	Well	GW	Well 148 Den4	Well	GW
Well 168 LDA4	Well	GW	Well CR14R PC Miller East	Well	GW
Well 31R	Well	GW	Well 33R Enderud	Well	GW
Well 41 Weaver 1	Well	GW	Well 82 A4	Well	GW
Well 111	Well	GW	Well 124	Well	GW
Well 170 Meadows DA6	Well	GW	Well 204	Well	GW
Well 174 Meadows D6	Well	GW	Well 50R	Well	GW
Well CR220	Well	GW	Well CR221	Well	GW
Well CR222	Well	GW	Well CR223	Well	GW
Well CR224	Well	GW	Well CR225	Well	GW
Well CR118	Well	GW	Well CR105	Well	GW
Well CR123	Well	GW	Well CR110	Well	GW
Well CR72R Castle Oaks 6 Denver	Well	GW	Well CR84 Meadows A7 Denver	Well	GW
Well CR152 Meadows A7 Dawson	Well	GW	Well CR73R Castle Oaks 6 Arapahoe	Well	GW
Well CR15 EDI Den1	Well	GW	Well CR21 Mikelson Den1	Well	GW
Well 22 Mikelson DA1	Well	GW	Well CR20 Mikelson A1	Well	GW
Well CR7C South Glovers 2	Well	GW	Well CR27	Well	GW
Well 43 Weaver A2	Well	GW	Well 44 Weaver LDA2	Well	GW
Well 45 Weaver D2	Well	GW	Well CR47 Meadows D1	Well	GW
Well 49 Meadows A8	Well	GW	Well 79 PC Alluvium	Well	GW
Well 80 PC Alluvium	Well	GW	Well 39 Weaver 1	Well	GW
Well 149 Meadows D3	Well	GW	Well 150 Meadows D2	Well	GW
Well CR67 Meadows A7 Arapahoe	Well	GW	Well 191 (AL-8)	Well	GW UDI Surface
Well 11R	Well	GW UDI Surface	Well 13R	Well	GW UDI Surface
Well 184 (AL-1)	Well	GW UDI Surface	Well 185 (AL-2)	Well	GW UDI Surface
Well 192 (AL-9)	Well	GW UDI Surface	Well CR16 EDI DAI	Well	GW

GW - Groundwater GWUDI - Groundwater under direct influence

Common Questions About Water

Is my water safe to drink?

Yes. Our water meets all the regulatory standards set by the Colorado Department of Public Health and Environment and the U.S. Environment Protection Agency. We are required to conduct frequent and routine water quality testing to ensure your water stays safe.

Why is my water discolored?

If you see black or brown water coming from your hot water tap, the culprit may be your hot water heater. Most manufacturers suggest flushing your water heater at least once a year. This discoloration is due to sediment settling at the bottom of the tank, which over time will build up. The sediment includes naturally occurring minerals in the water, such as manganese (a black color) and iron (a brown color).

White or cloudy water may be due to air in the pipes that is released as oxygen bubbles when water leaves the tap. It is not a health risk. Other causes of this type of discoloration may be due to the time of the year – during colder months water in outdoor pipes is colder and holds more oxygen than household pipes. When the cold water enters your home or building and begins to warm, the oxygen bubbles escape which can cause the water to look milky. Another cause may be maintenance or construction on the distribution system lines. This may allow air to enter the water pipes and cause the water to have a cloudy appearance.

Brown or yellow water from the first draw, may be the internal plumbing of your home or building. This may be the issue if you only see the discoloration for the first minute or two after your tap is turned on. If you see this discoloration constantly, it may be due to sediments in the water mains. Sediment can get stirred up if there is flushing or maintenance in the area and may cause a brown or yellow color. One way to figure out whether the discoloration is due to your indoor plumbing or from the water mains is to consult with your neighbors and see if they are having similar issues with their water quality.

Why is there white residue on my glassware?

Castle Rock has moderately hard water. Hardness is caused by naturally occurring calcium and magnesium ions in the water. White spots on glassware or other fixtures are caused by the calcium. This is not harmful. In fact, calcium and magnesium are found in many food products.

Why does my water taste/smell funny?

Your water may taste funny to you if you recently moved from an area containing very few naturally occurring minerals, or if you are accustomed to a certain type of source water. We sometimes get reports from customers that their water smells like rotten eggs or sewage/septic. Often, these smells are caused by gases that are formed in the household drains and may not be directly related to your water supply. Bacteria that live on hair, food, soap and other organic matter can form gases and can produce unpleasant odors. Another cause of these odors may be your hot water heater. If your water heater has been turned off and not in use for a while, it can produce a septic or sulfuric smell.

Is there fluoride in my water?

Yes, there is naturally occurring fluoride in Castle Rock's water. Fluoride comes from the erosion of natural deposits. The fluoride level in Castle Rock has an average of 0.8 ppm with the Maximum Contaminant Level set at 4 ppm. Castle Rock does not add any additional fluoride to the water supply.

Is there lead in my drinking water? If so, what is the Town of Castle Rock doing about it?

Lead enters the water through contact with plumbing pipes and fixtures within the home. It does this by "leaching" through the corrosion of pipes, solder, fixtures and faucets (brass) and fittings. We are required to conduct periodic lead and copper testing. The purpose of this testing is to see if there is proper treatment that prevents the corrosion of the piping materials in homes. Since Castle Rock started this sampling back in 1992, there have been no elevated levels of either lead or copper from the samples collected.

If you would like to have your home tested for lead, please contact us at waterquality@CRgov.com or 720-733-6000.

Where can I get my water tested?

Typically, we do not test water from individual customer homes. If you would like to have your individual tap water tested by a state-certified laboratory, contact us.