

CITY OF DURANGO
2017 Drinking Water
Consumer Confidence Report
For Calendar Year 2016 updated on 08/08/2017
Public Water System ID CO 0134150

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.

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. 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 microbiological contaminants call the 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 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**, 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**, that 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 processes and petroleum production, and also may come from gas stations, urban storm water runoff, and septic systems.
- ◆ **Radioactive contaminants**, that 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, 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.

Our Water Source(s)

Source	Water Type
Florida River	Surface Water
Animas River	Surface Water
City Reservoir No. 1	Surface Water
Terminal Reservoir	Surface Water

The Colorado Department of Public Health and Environment has provided a Source Water Assessment Report for our water supply. You may obtain a copy of the report by visiting <http://wqcdcompliance.com/ccr> or by contacting Dave Ferguson at 970-375-4887.

Potential sources of contamination in our source water area come from: EPA Areas of Concern, Permitted Wastewater Discharge Sites, Solid Waste Sites, Storage Tanks, Existing / Abandoned Mine Sites, Other Facilities, Commercial / Industrial / Transportation, Residential, Pasture/Hay, Forest, Septic Systems, Oil / Gas Wells and Road Miles.

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.

Please contact Dave Ferguson at 970-375-4887 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

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

- ◆ **Parts per million (ppm) or Milligrams per liter (mg/L)** - one part per million corresponds to one minute in two years or a single penny in \$10,000.
- ◆ **Parts per billion (ppb) or Micrograms per liter (µg/L)** - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.
- ◆ **Picocuries per liter (pCi/L)** - Picocuries per liter is a measure of the radioactivity in water.
- ◆ **Nephelometric Turbidity Unit (NTU)** - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- ◆ **Action Level (AL)** - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- ◆ **Treatment Technique (TT)** - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.
- ◆ **Maximum Contaminant Level Goal (MCLG)** - The “Goal” is 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 Contaminant Level (MCL)** - The “Maximum Allowed” is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- ◆ **Minimum Reporting Level (MRL)** – UCMR3 contaminant levels below the MRL are reported as Not Detected (ND)
- ◆ **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.
- ◆ **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.
- ◆ **Running Annual Average (RAA)** - An average of monitoring results for the previous 12 calendar months.
- ◆ **Gross Alpha, Including RA, Excluding RN & U** - This is the gross alpha particle activity compliance value. It includes radium-226, but excludes radon-222 and uranium.
- ◆ **Microscopic Particulate Analysis (MPA)** - An analysis of surface water organisms and indicators in water. This analysis can be used to determine performance of a surface water treatment plant or to determine the existence of surface water influence on a ground water well.
- ◆ **Alkalinity** – The capacity of water’s ability to neutralize acid based on its dissolved mineral content.
- ◆ **Hardness** – A measurement of dissolved minerals (primarily calcium and magnesium) in water.
- ◆ **BDL (Below detectable limit or level)** – Due to limitations of chemical analysis procedures, some small concentrations cannot be precisely measured. These concentrations are said to be below the detectable limit.
- ◆ **Violation** – A failure to meet a Colorado Primary Drinking Water Regulation.

Detected Contaminants

City of Durango routinely monitors for contaminants in your drinking water according to Federal and State laws. The following tables show all detections found in the period of January 1st to December 31st, 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. The “Range” column in the tables below will show a single value for those contaminants that were sampled only once. Violations, if any, are reported in the next section of this report.

Note: Only detected contaminants appear in this report. If no tables appear in this section, that means that City Of Durango did not detect any contaminants in the last round of monitoring.

“*Cryptosporidium* is a microbial pathogen found in surface water throughout the United States. Although filtration removes *cryptosporidium*, the most commonly used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of *cryptosporidium* may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks.

However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.”

Microorganism Contaminants Sampled in the Source Water

Source Water Microorganism	Collection Date	Result	Sample Size	Typical Source
CRYPTOSPORIDIUM	2016	0	9	Infected human and animal feces
E. COLI	2016	7	9	Infected human and animal feces

Inorganic Contaminants Sampled at the Entry Point to the Distribution System

Inorganics	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
BARIUM	6/14/16	0.064	0.064	ppm	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
FLUORIDE	6/14/16	0.686	0.719 average	ppm	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
NITRATE	6/14/16	0.025	0.025	ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

Disinfectant Residual Sampled in the Distribution System

Disinfectant	MRDL	MRDLG	Units	Range	Average	Year	Source
CHLORINE	4.0	4.0	ppm	0.24 – 1.02	0.665	2016	Water additive used to control microbes

Disinfection Byproducts Sampled in the Distribution System

Disinfection Byproducts	Date	Average	Range	Highest RAA	Unit	MCL	MCLG	Typical Source
TOTAL HALOACETIC ACIDS (HAA5)	2016	19.43	3.90 – 31.10	19.43	ppb	60	N/A	By-product of drinking water chlorination
TOTAL TRIHALOMETHANES (TTHMs)	2016	35.98	9.40 – 76.70	35.98	ppb	80	N/A	By-product of drinking water chlorination

Removal Ratio of Disinfection Byproduct Precursors

Disinfection Byproducts Precursors (DBP)	Year	Average	Range	TT Minimum	TT Violation	Typical Sources
Total Organic Carbon Removal Ratio	2016	1.33	1 – 1.87	1.00	No	Naturally present in the environment

Lead and Copper Sampled in the Distribution System

Lead and Copper	Collection Date	90 TH Percentile	Unit	AL	Typical Source
COPPER, FREE	2015	0.002	ppm	1.3	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
LEAD	2015	2	ppb	15	Corrosion of household plumbing systems; Erosion of natural deposits

Radionuclides Sampled at the Entry Point to the Distribution System

Radionuclides	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
RADIUM, COMBINED (226, 228)	6/14/2016	0.1	0.1	pCi/L	5	0	Erosion of natural deposits
GROSS ALPHA	6/14/2016	0.9	0.9	pCi/L	15	0	Erosion of natural deposits
URANIUM, COMBINED	6/14/2016	BDL	BDL	ppb	30	0	Erosion of natural deposits

Summary of Turbidity Sampled at the Entry Point to the Distribution System

Turbidity	Sample Date	Level Found	TT Requirement	Typical Source
TURBIDITY	9/22/2016	Highest single measurement: 0.16 NTU	Maximum 1 NTU for any single measurement	Soil Runoff
	Continuous monitoring	100% of samples meeting TT requirement for our technology	In any month, at least 95% of samples must be less than 0.3 NTU	

Microorganism Contaminants Sampled in the Distribution System

Microbiological	Result	MCL	Violation	MCLG	Typical Source
COLIFORM (TCR)	40 samples per month, one sample in August & one sample in October returned as positive.	MCL: Systems that Collects 40 Samples per Month - No more than 2 positives monthly	No	0	Naturally present in the environment
E. COLI	0	MCL: A Routine Sample and a Repeat Sample are Total Coliform Positive, and One is also Fecal Positive/E. Coli Positive	No	0	Human and animal fecal waste

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. EPA recommends these standards but does not require water systems to comply.

Secondary Contaminants/ Other Monitoring	Collection Date	Highest Value	Range	Unit	Secondary Standard
ALKALINITY	2016	104.5 RAA	62 – 159	ppm	NO MCL
CALCIUM HARDNESS	2016	92.4 RAA	65.2 – 152	ppm	NO MCL
CALCIUM HARDNESS	2016	5.40 RAA	3.81 – 8.88	grains/gal	NO MCL
SODIUM	6/14/16	5.20	5.20	ppm	NO MCL
NICKEL	6/14/16	BDL	BDL	ppb	NO MCL
MPA-MICROORGANISM REMOVAL	8/4/2016	99.10	99.10	%	N/A

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 but do not currently have health-based standards set under the Safe Drinking Water Act. The 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. To view the City of Durango complete Unregulated Contaminant Monitoring visit (<https://www.epa.gov/dwucmr/national-contaminant-occurrence-database-ncod>) Contaminants that were detected during our UCMR3 sampling and the corresponding analytical results are provided below.

UCMR3 Contaminants	Year	Average	Range	Unit	MRL	Typical Source
VANADIUM	2013	0.08	ND – 0.23	ppb	0.2	Erosion of natural deposits
MOLYBDENUM	2013	0.125	ND – 1.0	ppb	1	Erosion of natural deposits
STRONTIUM	2013	423	309 – 490	ppb	0.3	Erosion of natural deposits
CHROMIUM - 6	2013	0.01	ND – 0.041	ppb	0.03	Erosion of natural deposits
CHLORATE	2013	23	ND – 34	ppb	20	Runoff from agricultural areas

Lead in Drinking Water

Infants and young children can be more vulnerable to lead in drinking water than the general population. 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 elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available at <http://www.epa.gov/safewater/lead> or from the *Safe Drinking Water Hotline* 800-426-4791.

Protecting Our Drinking Water

In an effort to ensure public health, the City of Durango works to protect its water system from the backflow of water from consumers' premises. Backflow from a property may contain potentially hazardous chemicals. For more information contact the Cross Connection Control Program at 970-375-4882.

A Note about Fluoride

The City of Durango participates in the State of Colorado Water Fluoridation Program. The Water Treatment Plant adjusts the level of fluoride to achieve 0.7 mg/L in the water delivered to the public as the optimum amount for oral health.

Bacteriological Quality

The City of Durango maintains a minimum of 0.2mg/L of free chlorine residual throughout the entire distribution system. We perform weekly sampling of our water mains to ensure public health and quality of the water.

Violations, Significant Deficiencies, and Formal Enforcement Actions

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.

Violations			
Type	Category	Analyte	Compliance Period
Disinfection Monitoring Equipment Verification	Monitoring & Recordkeeping and Data Verification	Chlorine	2016
Source Water Microbiology	Failure to Monitor or Timely Report Test Results	Cryptosporidium, E.coli, Turbidity	11/1/2016 – 11/30/2016

Violation Notes:

Disinfection Monitoring Equipment Verification – The City of Durango failed to perform weekly verification checks on its continuous chlorine monitoring equipment. Verification checks involve pulling a grab sample and testing it using a benchtop or portable chlorine analyzer. On 2/01/2017, the City of Durango began daily verification checks on its continuous chlorine monitoring equipment, and monthly calibration verification with secondary gel standards on its benchtop and portable chlorine analyzers.

Source Water Microbiology – The required cryptosporidium, E. coli, and turbidity sample was collected during the specified compliance month. The sampling event was scheduled for 11/08/2016, but was collected on 11/01/2016. The City of Durango was required to collect the sample within the five-day period of the scheduled sample date. The sample results were consistent with historical results.

2015 Gold King Mine Spill Follow-Up

In 2016, the City of Durango performed additional monitoring not required by the Colorado Department of Public Health and Environment after the initial pumping of source water from the Animas River to the Terminal Reservoir. Below is a table detailing those monitoring results. They are consistent with pre-Gold King Mine Spill potable water quality data.

Organics and Inorganics	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
ANTIMONY	6/2/2016-6/10/2016	0	0	ppb	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
ARSENIC	6/2/2016-6/10/2016	0	0	ppm	0.01	0.01	Erosion of natural deposits; and leaching from ore processing sites
BARIUM	6/2/2016-6/10/2016	0.0841	0.0629 – 0.0841	ppm	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
BERYLLIUM	6/2/2016-6/10/2016	0	0	ppb	4	4	Erosion of natural deposits; Discharge from coal/oil fired power plants, and metal refineries; and found naturally in some foods
CADMIUM	6/2/2016-6/10/2016	0	0	ppb	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
CHROMIUM	6/2/2016-6/10/2016	0	0	ppm	0.1	0.1	Erosion of natural deposits. Discharge from steel / pulp mills
FLUORIDE	6/2/2016-6/10/2016	0.79	0.61 – 0.79	ppm	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
MERCURY	6/2/2016-6/10/2016	0	0	ppb	2	2	Erosion of natural deposits; discharge from coal/oil fired power plants; discharge from metal refineries; and incineration of mercury containing material
SELENIUM	6/2/2016-6/10/2016	0	0	ppm	0.05	0.05	Erosion of natural deposits; an essential nutritional element found in some foods; electronics glass; rubber; and in paint pigments
THALLIUM	6/2/2016-6/10/2016	0.2	0 – 0.2	ppb	2		Leaching from ore-processing sites; discharge from electronics, glass, and drug factories

Secondary Contaminants/ Other Monitoring	Collection Date	Highest Value	Range	Unit	Secondary Standard	Action Level
COPPER	6/2/2016-6/10/2016	0.0349	0.0324 – 0.0349	ppm	NO MCL	1.3
NICKEL	6/2/2016-6/10/2016	1.6	1.3 – 1.6	ppb	NO MCL	
LEAD	6/2/2016-6/10/2016	0	0	ppb	NO MCL	15
SODIUM	6/2/2016-6/10/2016	5.42	4.82 – 5.42	ppm	NO MCL	



Beautiful Double Rainbow over Terminal Reservoir