



2017 Analytical Results Summary for Pueblo's Raw Water Pipeline

Parameter	Units	Range of Detection	Pueblo Raw Water Average Level	Number of Samples Analyzed
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Clarity				
Turbidity	NTU	0.55 - 9.22	2.29	250

Microbiological				
Total Coliform Bacteria	MPN/100 mL	<1 - 15531	1298.3	196
E. Coli Bacteria	MPN/100 mL	<1 - 48.8	4.4	196
Giardia	Oocysts/ 100 L	ND	ND	4
Cryptosporidium	Oocysts/ 100 L	ND	ND	4

Radiologicals*				
Gross Alpha	pCi/L	5.1	5.1	1
Gross Alpha (Less Radon and Uranium)	pCi/L	2.6	2.6	1
Radium-226	pCi/L	0.0	0.0	1
Radium-228	pCi/L	0.30	0.30	1
Uranium	pCi/L	2.5	2.5	1
Uranium	µg/L	3.6	3.60	1

Inorganic Chemicals				
Trace Metals				
Aluminum	µg/L	<1.00 - 119	15.4	10
Antimony	µg/L	<1.00	<1.00	10
Arsenic	µg/L	<1.00	<1.00	10
Barium	µg/L	42.3 - 63.9	56.4	10
Beryllium	µg/L	<1.00	<1.00	10
Cadmium	µg/L	<1.00	<1.00	10
Calcium	mg/L	37.6 - 64.5	55.3	10
Chromium	µg/L	<1.00	<1.00	10
Cobalt	µg/L	<1.00	<1.00	10
Copper	µg/L	1.49 - 2.28	1.80	10
Iron	mg/L	<0.50	<0.50	10
Lead	µg/L	<1.00	<1.00	10
Magnesium	mg/L	8.43 - 14.9	12.6	10
Manganese	µg/L	<1.00 - 24.8	6.90	10
Mercury	µg/L	<0.50	<0.50	10
Molybdenum	µg/L	3.60 - 4.54	4.12	10
Nickel	µg/L	1.33 - 3.53	2.30	10
Potassium	mg/L	1.49 - 2.44	2.08	10
Selenium	µg/L	2.57 - 5.30	4.19	10
Silver	µg/L	<1.00	<1.00	10
Sodium	mg/L	11.1 - 23.3	18.1	10
Thallium	µg/L	<1.00	<1.00	10
Vanadium	µg/L	<1.00 - 1.46	1.01	10
Zinc	µg/L	1.10 - 7.53	3.38	10



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Organic Chemicals				
Total Volatile Organic Compounds (VOC's)				
Benzene	µg/L	<0.50	<0.50	1
Bromobenzene	µg/L	<0.50	<0.50	1
Bromochloromethane	µg/L	<0.50	<0.50	1
Bromodichloromethane	µg/L	<0.50	<0.50	1
Bromoform	µg/L	<0.50	<0.50	1
Bromomethane	µg/L	<0.50	<0.50	1
n-Butylbenzene	µg/L	<0.50	<0.50	1
sec-Butylbenzene	µg/L	<0.50	<0.50	1
tert-Butylbenzene	µg/L	<0.50	<0.50	1
Carbon tetrachloride	µg/L	<0.50	<0.50	1
Chlorobenzene	µg/L	<0.50	<0.50	1
Chloroethane	µg/L	<0.50	<0.50	1
Chloroform	µg/L	<0.50	<0.50	1
Chloromethane	µg/L	<0.50	<0.50	1
o-Chlorotoluene	µg/L	<0.50	<0.50	1
p-Chlorotoluene	µg/L	<0.50	<0.50	1
Dibromochloromethane	µg/L	<0.50	<0.50	1
Dibromomethane	µg/L	<0.50	<0.50	1
m- Dichlorobenzene	µg/L	<0.50	<0.50	1
o- Dichlorobenzene	µg/L	<0.50	<0.50	1
p- Dichlorobenzene	µg/L	<0.50	<0.50	1
Dichlorodifluoromethane	µg/L	<0.50	<0.50	1
1,1- Dichloroethane	µg/L	<0.50	<0.50	1
1,2- Dichloroethane	µg/L	<0.50	<0.50	1
1,1- Dichloroethylene	µg/L	<0.50	<0.50	1
cis-1,2- Dichloroethylene	µg/L	<0.50	<0.50	1
trans-1,2- Dichloroethylene	µg/L	<0.50	<0.50	1
1,2- Dichloropropane	µg/L	<0.50	<0.50	1
1,3- Dichloropropane	µg/L	<0.50	<0.50	1
2,2- Dichloropropane	µg/L	<0.50	<0.50	1
1,1- Dichloropropene	µg/L	<0.50	<0.50	1
cis-1,3- Dichloropropene	µg/L	<0.50	<0.50	1
trans-1,3- Dichloropropene	µg/L	<0.50	<0.50	1
1,3- Dichloropropene	µg/L	<0.50	<0.50	1
Ethylbenzene	µg/L	<0.50	<0.50	1
Hexachlorobutadiene	µg/L	<0.50	<0.50	1
Isopropylbenzene	µg/L	<0.50	<0.50	1
p-Isopropyltoluene	µg/L	<0.50	<0.50	1
Methylene chloride	µg/L	<0.50	<0.50	1
Naphthalene	µg/L	<0.50	<0.50	1
n-Propylbenzene	µg/L	<0.50	<0.50	1
Styrene	µg/L	<0.50	<0.50	1
Tetrachloroethylene	µg/l	<0.50	<0.50	1
1,1,1 - Trichloroethane	µg/l	<0.50	<0.50	1
1,1,1,2- Tetrachloroethane	µg/L	<0.50	<0.50	1
1,1,2,2- Tetrachloroethane	µg/L	<0.50	<0.50	1
Toluene	µg/L	<0.50	<0.50	1
1,2,3- Trichlorobenzene	µg/L	<0.50	<0.50	1
1,2,4- Trichlorobenzene	µg/L	<0.50	<0.50	1
1,1,2- Trichloroethane	µg/L	<0.50	<0.50	1
Trichloroethylene	µg/L	<0.50	<0.50	1
Trichlorofluoromethane	µg/L	<0.50	<0.50	1
1,2,3- Trichloropropane	µg/L	<0.50	<0.50	1
1,2,4- Trimethylbenzene	µg/L	<0.50	<0.50	1
1,3,5- Trimethylbenzene	µg/L	<0.50	<0.50	1
Vinyl chloride	µg/L	<0.50	<0.50	1
m,p- Xylene	µg/L	<0.50	<0.50	1
o-Xylene	µg/L	<0.50	<0.50	1
Xylenes, Total	µg/L	<0.50	<0.50	1



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Organic Chemicals (continued)				
Pesticides				
Aldrin	µg/L	<0.0095	<0.0095	2
alpha-Chlordane	µg/L	<0.0095	<0.0095	2
gamma-Chlordane	µg/L	<0.0095	<0.0095	2
Chlordane	µg/L	<0.19	<0.19	2
Dieldrin	µg/L	<0.0095	<0.0095	2
Endrin	µg/L	<0.0095	<0.0095	2
Hexachlorocyclopentadiene	µg/L	<0.095	<0.095	2
Heptachlor	µg/L	<0.0095	<0.0095	2
Heptachlor epoxide	µg/L	<0.0095	<0.0095	2
Hexachlorobenzene	µg/L	<0.0095	<0.0095	2
Methoxychlor	µg/L	<0.047	<0.047	2
Toxaphene	µg/L	<0.71	<0.71	2
gamma-BHC	µg/L	<0.0095	<0.0095	2
Aroclor 1016	µg/L	<0.076	<0.076	2
Aroclor 1221	µg/L	<0.24	<0.24	2
Aroclor 1232	µg/L	<0.095	<0.095	2
Aroclor 1242	µg/L	<0.095	<0.095	2
Aroclor 1248	µg/L	<0.095	<0.095	2
Aroclor 1254	µg/L	<0.095	<0.095	2
Aroclor 1260	µg/L	<0.095	<0.095	2
PCB-Total	µg/L	<0.24	<0.24	2
Alachlor	µg/L	<0.1	<0.1	2
Atrazine	µg/L	<0.1	<0.1	2
Simazine	µg/L	<0.07	<0.07	2
Herbicides				
2,4,-D	µg/L	<0.10	<0.10	2
2,4,5-TP	µg/L	<0.20	<0.20	2
Dicamba	µg/L	<0.30	<0.30	2
Dalapon	µg/L	<1.0	<1.0	2
Dinoseb	µg/L	<0.20	<0.20	2
Pentachlorophenol	µg/L	<0.040	<0.040	2
Picloram	µg/L	<0.10	<0.10	2
Butachlor	µg/L	<0.1	<0.1	2
Metolachlor	µg/L	<0.1	<0.1	2
Metribuzin	µg/L	<0.1	<0.1	2
Propachlor	µg/L	<0.1	<0.1	2
Endothall	µg/L	<0.90	<0.90	2
Carbamate Pesticides				
3-Hydroxycarbofuran	µg/L	<0.500	<0.500	2
Aldicarb	µg/L	<0.500	<0.500	2
Aldicarb sulfone	µg/L	<0.500	<0.500	2
Aldicarb sulfoxide	µg/L	<0.500	<0.500	2
Carbaryl	µg/L	<0.500	<0.500	2
Carbofuran	µg/L	<0.500	<0.500	2
Methiocarb	µg/L	<0.500	<0.500	2
Methomyl	µg/L	<0.500	<0.500	2
Oxamyl (Vydate)	µg/L	<0.500	<0.500	2
Propoxur	µg/L	<0.500	<0.500	2
1,2-Dibromo 3-chloropropane	µg/L	<0.0098	<0.0098	2
1,2-Dibromoethane	µg/L	<0.0098	<0.0098	2
Other Organic Chemicals				
Benzo(a)pyrene	µg/L	<0.02	<0.02	2
Bis(2-ethylhexyl)adipate	µg/L	<0.60	<0.60	2
Bis(2-ethylhexyl)phthalate	µg/L	<0.60	<0.60	2



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Parameters (Cont'd)	Units	Range of Detection	Pueblo Raw Water Average Level	Number of Samples Analyzed
Additional Parameters				
Alkalinity (as CaCO ₃)	mg/L	68 - 118	95.5	99
Ammonia (as Nitrogen)	mg/L	<0.01 - 0.08	0.02	99
Calcium Hardness (as CaCO ₃)	mg/L	84 - 280	131	52
Chloride	mg/L	3.75 - 27.4	7.42	48
Conductivity	µmho/cm	228 - 559	405	250
Fluoride	mg/L	0.31 - 0.50	0.44	359
Total Hardness (as CaCO ₃)	mg/L	110 - 208	168	52
Ortho-Phosphate (as Phosphorous)	mg/L	<0.50	<0.50	4
pH	units	7.80 - 8.70	8.19	249
Total Dissolved Solids	mg/L	168 - 472	282	52
Sulfate	mg/L	52.6 - 122	96	50
Total Organic Carbon	mg/L	2.15 - 3.10	2.64	12

Listed above are regulated and unregulated contaminants detected in the raw water in 2017.

Terms and Definitions Used in the Above Data Table

Oocysts - Life cycle stage of a parasitic organism.

Turbidity - Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our plant's filtration system.

NTU - Nephelometric Turbidity Unit - A unit of measurement of turbidity in the water.

MPN/100 mL - Most Probable Number per 100 milliliter - The most probable number of bacterial colonies per 100 milliliters of a water sample.

ND - Not Detected

µg/L - microgram per liter or one part per billion

mg/L - milligram per liter or one part per million

µmho/cm - a unit of measurement of the conductivity of the water

< - Less Than

* Radiologicals analyzed in 2012.

Please contact the Board of Water Works Water Quality Laboratory for any additional information regarding water quality at (719) 584-0467. Hours are 8:00 am - 4:30 pm Monday through Friday.