



**2016 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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<b>Clarity</b>				
Turbidity	NTU	0.58 - 10.9	2.55	251

<b>Microbiological</b>				
Total Coliform Bacteria	MPN/100 mL	<1 - 24196	1125.5	193
E. Coli Bacteria	MPN/100 mL	<1 - 68.4	9.0	193
Giardia	Oocysts/ 100 L	ND	ND	12
Cryptosporidium	Oocysts/ 100 L	ND	ND	12

<b>Radiologicals*</b>				
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

<b>Inorganic Chemicals</b>				
<b>Trace Metals</b>				
Aluminum	µg/L	5.12 - 140	28.1	9
Antimony	µg/L	<1.00	<1.00	10
Arsenic	µg/L	<1.00 - 1.09	<1.00	10
Barium	µg/L	40.0 - 61.2	53.2	10
Beryllium	µg/L	<1.00	<1.00	9
Cadmium	µg/L	<1.00	<1.00	10
Calcium	mg/L	32.8 - 52.1	46.1	10
Chromium	µg/L	<1.00 - 7.26	1.73	10
Cobalt	µg/L	<1.00	<1.00	10
Copper	µg/L	1.67 - 3.36	2.39	10
Iron	mg/L	<0.10 - 0.16	<0.10	10
Lead	µg/L	<1.00	<1.00	10
Magnesium	mg/L	6.98 - 14.2	11.1	10
Manganese	µg/L	2.66 - 39.5	13.1	10
Mercury	µg/L	<0.50	<0.50	10
Molybdenum	µg/L	3.11 - 5.12	4.24	10
Nickel	µg/L	2.17 - 3.75	3.09	10
Potassium	mg/L	1.45 - 2.43	2.08	10
Selenium	µg/L	1.97 - 5.15	4.28	10
Silver	µg/L	<1.00	<1.00	10
Sodium	mg/L	9.09 - 20.1	15.9	10
Thallium	µg/L	<1.00	<1.00	10
Vanadium	µg/L	<1.00 - 3.36	1.30	10
Zinc	µg/L	3.52 - 21.6	7.82	10



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<b>Organic Chemicals</b>				
<b>Total Volatile Organic Compounds (VOC's)</b>				
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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<b>Parameter</b>	<b>Units</b>	<b>Range of Detection</b>	<b>Pueblo Raw Water Average Level</b>	<b>Number of Samples Analyzed</b>
<b>Organic Chemicals (continued)</b>				
<b>Pesticides*</b>				
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
<b>Herbicides*</b>				
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
<b>Carbamate Pesticides*</b>				
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
<b>Other Organic Chemicals*</b>				
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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<b>Parameters (Cont'd)</b>	<b>Units</b>	<b>Range of Detection</b>	<b>Pueblo Raw Water Average Level</b>	<b>Number of Samples Analyzed</b>
<b>Additional Parameters</b>				
Alkalinity (as CaCO <sub>3</sub> )	mg/L	78 - 123	107	69
Ammonia (as Nitrogen)	mg/L	0.01 - 0.08	0.02	90
Calcium Hardness (as CaCO <sub>3</sub> )	mg/L	92 - 182	139	52
Chloride	mg/L	4.39 - 10.6	7.93	39
Conductivity	µmho/cm	265 - 521	430	251
Fluoride	mg/L	0.36 - 0.54	0.46	363
Total Hardness (as CaCO <sub>3</sub> )	mg/L	114 - 204	176	52
Nitrate (as Nitrogen)	mg/L	0.21 - 0.37	0.30	4
Nitrite (as Nitrogen)	mg/L	<0.05	<0.05	4
Total Nitrate and Nitrite (as Nitrogen)	mg/L	0.21 - 0.37	0.30	4
Ortho-Phosphate (as Phosphorous)	mg/L	<0.50	<0.50	4
pH	units	7.21 - 8.49	8.04	251
Total Dissolved Solids	mg/L	177 - 388	291	52
Sulfate	mg/L	51.7 - 125	102	47
Total Organic Carbon	mg/L	2.4 - 2.9	2.6	12

Listed above are regulated and unregulated contaminants detected in the raw water in 2016.

**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. Pesticides, herbicides, carbamate pesticides and other organic chemicals analyzed in 2014.

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.