

2021 Annual Water Quality Report

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UNREGULATED CONSTITUENTS - Monitored by ADH and BWD

Physical and Chemical Parameters	Units	BWD
Alkalinity (Phenolphthalein)	ppm as CaCO ₃	0
Alkalinity (Total) *	ppm as CaCO ₃	53 (avg)
Calcium *	ppm as Ca	27 (avg)
Range of Results	ppm as Ca	22-34
Conductivity *	µS/cm	191 (avg)
Hardness (Total) *	ppm as CaCO ₃	75 (avg)
Range of Results	ppm as CaCO ₃	59 - 92
Magnesium	ppm as Mg	1.82
Nickel	ppm	ND
Potassium	ppm	1.39
Sodium	ppm	6.27

PRIMARY STANDARDS - Health Related and Mandated by U.S. EPA & ADH

Disinfectant	Units	MRDLG	MRDL	BWD
Total Residual Chlorine* (Average)	ppm	4.0	4.0	1.56
Range of Results	ppm			1.26-1.82
Chlorine Dioxide*	ppm	0.8	0.8	0.04 (avg)
Clarity	Units	MCLG	MCL	BWD
Turbidity * (Treated Finished Water)			>0.3 NTU in	
Highest yearly sample result	NTU	n/a	>5% of samples	0.15
Average NTU	NTU		or	0.07
Lowest % of samples meeting limit	%		any 1 sample >1	100
			NTU	
Microbiological	Units	MCLG	MCL	BWD
Total Coliform Bacteria	P/A	0	5%/month	0
Fecal Coliform or <i>Escherichia coli</i>	P/A	0	0	0
Inorganic Chemicals	Units	MCLG	MCL	BWD
Antimony	ppb	6	6	ND
Arsenic	ppb	0	10	ND
Asbestos	MFL	7	7	Waiver
Barium	ppm	2	2	0.018
Beryllium	ppb	4	4	ND
Cadmium	ppb	5	5	ND
Chlorite*	ppm	0.8	1.0	0.26 (avg)
Chromium	ppb	100	100	ND
Copper	ppm	1.3	AL=1.3	ND
Cyanide	ppb	200	200	ND
Fluoride (Average)	ppm	4.0	4.0	0.73
Range of Results	ppm			0.61-0.81
Lead	ppb	0	AL=15	ND
Mercury	ppb	2	2	ND
Nitrate (NO ₃ -N) *	ppm	10	10	0.48 (avg)
Selenium	ppb	50	50	ND
Thallium	ppb	0.5	2	ND

There were no EPA Safe Drinking Water Act (SDWA) monitoring or compliance violations in 2021 for Beaver Water District.

Definitions

Maximum Contaminant Level Goal or 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 Contaminant Level or MCL: 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, BAT.

Maximum Residual Disinfectant Goal or MRDLG: The level of a drinking disinfectant below which there is no known or expected risk to health.

Maximum Residual Disinfectant Level or MRDL: The highest level of a disinfectant allowed in drinking water.

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

Action Level or AL: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

mrem/yr = millirems per year (a unit of absorbed radiation dose)

ND = Non-detected, constituent not present at detection limit

NTU = Nephelometric Turbidity Units

P/A = Presence / Absence or Present / Absent

pCi/L = picocuries per liter (a measure of radioactivity)

ppm = parts per million, or milligrams per liter (mg/l)

ppb = parts per billion, or micrograms per liter (ug/l)

RAA = Running Annual Average

uS/cm = microSiemens per centimeter

Waiver = an exemption to perform monitoring issued by the ADH based on system evaluations

* Analyzed and reported by Beaver Water District. All other analyses in this report by ADH.

Radionuclides	Units	MCLG	MCL	BWD	Violation
Gross Alpha	pCi/L	0	15 pCi/L	ND	No
Gross Beta	mrem	0	4 mrem/yr	ND	No
Sr-89 Activity	pCi/L	0	4 mrem/yr	ND	No
Sr-90 Activity	pCi/L	0	4 mrem/yr	ND	No
Tritium (Average)	pCi/L	0	4 mrem/yr	193.3	No
Uranium	pCi/L	0	30 ug/L	ND	No

* Tritium and Strontium are Beta particle emitters and fall in the combined 4 mrem/yr MCL of the Gross Beta parameter.

SECONDARY STANDARDS - Aesthetic Standards Recommended by EPA & ADH

Physical Parameters	Units	MCLG	BWD
Apparent Color	units	15	5
pH * (Average)	units	6.5 - 8.5	8.3
Inorganic Chemicals	Units	MCLG	BWD
Aluminum	ppm	0.05 - 0.2	ND
Chloride	ppm	250	6.5
Corrosivity * (Average)	SI	Non-corrosive	0.14
Langelier Saturation Index			
Iron	ppm	0.3	ND
Manganese	ppm	0.05	ND
Silver	ppm	0.1	ND
Sulfate	ppm	250	26.5
Total Dissolved Solids *	ppm	500	111 (avg)
Zinc	ppm	5	ND

<u>Volatile Organic Contaminants (VOCs) - Regulated</u>	<u>Units</u>	<u>MCLG</u>	<u>MCL</u>	<u>BWD</u>
Total Trihalomethanes (TTHMs)				
Highest Running 12 Month Average	ppb	N/A	80	35
Range of quarterly samples	ppb			14.7 - 49.6
Haloacetic Acids 5 (HAA5)				
Highest Running 12 Month Average	ppb	N/A	60	31
Range of quarterly samples	ppb			16.6 - 47.5
Benzene	ppb	0	5	ND
Carbon Tetrachloride	ppb	0	5	ND
Chlorobenzene	ppb	100	100	ND
o-Dichlorobenzene (1,2-Dichlorobenzene)	ppb	600	600	ND
p-Dichlorobenzene (1,4-Dichlorobenzene)	ppb	75	75	ND
1,2-Dichloroethane	ppb	0	5	ND
1,1-Dichloroethene (1,1-Dichloroethylene)	ppb	7	7	ND
cis-1,2-Dichloroethene (c-1,2-Dichloroethylene)	ppb	70	70	ND
trans-1,2-Dichloroethene (t-1,2-Dichloroethylene)	ppb	100	100	ND
Dichloromethane (Methylene Chloride)	ppb	0	5	ND
1,2-Dichloropropane	ppb	0	5	ND
Ethylbenzene	ppb	700	700	ND
Styrene	ppb	100	100	ND
Tetrachloroethene (Tetrachloroethylene)	ppb	0	5	ND
Toluene	ppm	1	1	ND
1,2,4-Trichlorobenzene	ppb	70	70	ND
1,1,1-Trichloroethane	ppb	200	200	ND
1,1,2-Trichloroethane	ppb	3	5	ND
Trichloroethene (Trichloroethylene)	ppb	0	5	ND
Vinyl Chloride	ppb	0	2	ND
Xylenes, Total	ppm	10	10	ND

Disinfection By-Product Precursors - Monitored by ADH

<u>Parameter</u>	<u>Removal Ratio Required</u>	<u>BWD</u>
Total Organic Carbon (TOC)	≥1.00	1.41

<u>Volatile Organic Contaminants (VOCs) - Unregulated</u>	<u>Units</u>	<u>BWD</u>
Bromobenzene	ppb	ND
Bromochloromethane (Chlorobromomethane)	ppb	ND
Bromodichloromethane	ppb	2.49
Bromoform	ppb	ND
Bromomethane	ppb	ND
n-Butylbenzene	ppb	ND
sec-Butylbenzene	ppb	ND
tert-Butylbenzene	ppb	ND
Chloroethane (Ethyl Chloride)	ppb	ND
Chloroform	ppb	7.8
Chloromethane	ppb	ND
2-Chlorotoluene	ppb	ND
4-Chlorotoluene	ppb	ND
Dibromochloromethane	ppb	ND
1,2-Dibromo-3-chloropropane (DBCP)	ppb	ND
1,2-Dibromoethane	ppb	ND
Dibromomethane (Methylene Bromide)	ppb	ND
1,3-Dichlorobenzene	ppb	ND
Dichlorodifluoromethane	ppb	ND
1,1-Dichloroethane	ppb	ND
1,3-Dichloropropane	ppb	ND
2,2-Dichloropropane	ppb	ND
1,1-Dichloropropene	ppb	ND
cis-1,3-Dichloropropene	ppb	ND
trans-1,3-Dichloropropene	ppb	ND
Hexachlorobutadiene	ppb	ND
Isopropylbenzene	ppb	ND
p-Isopropyltoluene	ppb	ND
Methyl tert-Butyl Ether (MTBE)	ppb	ND
Naphthalene	ppb	ND
n-Propylbenzene	ppb	ND
1,1,1,2-Tetrachloroethane	ppb	ND
1,1,2,2-Tetrachloroethane	ppb	ND
1,2,3-Trichlorobenzene	ppb	ND
Trichlorofluoromethane	ppb	ND
1,2,3-Trichloropropane	ppb	ND
1,2,4-Trimethylbenzene	ppb	ND
1,3,5-Trimethylbenzene	ppb	ND

<u>Synthetic Organic Contaminants (SOCs) - Regulated</u>	<u>Units</u>	<u>MCLG</u>	<u>MCL</u>	<u>BWD</u>
2,4-D	ppb	70	70	ND
2,4,5-TP (Silvex)	ppb	50	50	ND
Alachlor	ppb	0	2	ND
Aldicarb	ppb	1	3	ND
Aldicarb Sulfone	ppb	1	3	ND
Aldicarb Sulfoxide	ppb	1	4	ND
Atrazine	ppb	3	3	ND
Benzo(a)pyrene (PAH)	ppb	0	0.2	ND
Bis (2-ethylhexyl) adipate	ppb	400	400	ND
Bis (2-ethylhexyl) phthalate	ppb	0	6	ND
Carbofuran	ppb	40	40	ND
Chlordane	ppb	0	2	ND
Dalapon	ppb	200	200	ND
Dibromochloropropane (1,2-Dibromo-3-chloropropane, DBCP)	ppb	0	0.2	ND
Dinoseb	ppb	7	7	ND
Diquat	ppb	20	20	ND
Endothall	ppb	100	100	ND
Endrin	ppb	2	2	ND
Ethylene dibromide (1,2-Dibromoethane, EDB)	ppb	0	0.05	ND
Glyphosate	ppb	700	700	ND
Heptachlor	ppb	0	0.4	ND
Heptachlor epoxide	ppb	0	0.2	ND
Hexachlorobenzene	ppb	0	1	ND
Hexachlorocyclopentadiene (HEX)	ppb	50	50	ND
Lindane	ppb	0.2	0.2	ND
Methoxychlor	ppb	40	40	ND
Oxamyl (Vydate)	ppb	200	200	ND
PCBs (Polychlorinated biphenyls)	ppb	0	0.5	ND
Pentachlorophenol (PCP)	ppb	0	1	ND
Picloram	ppb	500	500	ND
Simazine	ppb	4	4	ND
Toxaphene	ppb	0	3	ND

<u>Synthetic Organic Contaminants (SOCs) - Unregulated</u>	<u>Units</u>	<u>BWD</u>
2,4,5-T	ppb	ND
3-Hydroxycarbofuran	ppb	ND
Acenaphthene	ppb	ND
Acenaphthylene	ppb	ND
Aldrin	ppb	ND
Anthracene	ppb	ND
Baygon	ppb	ND
Benzo (g,h,i) perylene	ppb	ND
Benzo(a)anthracene	ppb	ND
Benzo(b) and (k) fluoranthene	ppb	ND
Butachlor	ppb	ND
Butyl benzyl phthalate	ppb	ND
Carbaryl	ppb	ND
Chrysene	ppb	ND
Dibenzo (a,h) anthracene	ppb	ND
Dicamba	ppb	ND
Dieldrin	ppb	ND
Diethyl phthalate	ppb	ND
Dimethyl phthalate	ppb	ND
Di-n-butyl phthalate	ppb	ND
Fluoranthene	ppb	ND
Fluorene	ppb	ND
Indeno (1,2,3-cd) pyrene	ppb	ND
Methiocarb	ppb	ND
Methomyl	ppb	ND
Metolachlor	ppb	ND
Metribuzin	ppb	ND
Napthalene	ppb	ND
Paraquat	ppb	ND
Phenanthrene	ppb	ND
Propachlor	ppb	ND
Pyrene	ppb	ND