



City of Calgary Bearspaw Water Treatment Plant Summary

January 1, 2019 to December 31, 2019

PARAMETER	UNITS	Bearspaw Treated Water (Entering the Distribution System)			Maximum Acceptable Concentration or Guideline ¹	Common Source
		Minimum	Maximum	Average		
Alkalinity, Total	mg/L as CaCO ₃	94	173	143	No Guidelines	Erosion of natural deposits in watershed
Aluminum	mg/L	0.021	0.140	0.059	0.100 (O) (Annual Average)	Naturally occurring and plant treatment
Ammonia	mg/L as N	<0.05			No Guidelines	Naturally occurring; released from agricultural or industrial wastes
Antimony	mg/L	<0.0005			0.006	Erosion of natural deposits in watershed
Arsenic	mg/L	<0.0005			0.010	Erosion of natural deposits in watershed
Atrazine + metabolites	mg/L	<0.001			0.005	Leaching and/or runoff from agricultural use
Azinphos - methyl	mg/L	<0.001			0.02	Leaching and/or runoff from agricultural use
Barium	mg/L	0.056	0.095	0.067	1.0	Erosion of natural deposits in watershed
Benzene	mg/L	<0.0005			0.005	Releases or spills from industrial use
Benzo[a]pyrene	mg/L	<0.000005			0.00004	Distribution System materials
Beryllium	mg/L	<0.0005			No Guidelines	Contamination from ceramic applications and manufacturing of aerospace, electronics and mechanical industries
Bicarbonate	mg/L as CaCO ₃	94	173	143	No Guidelines	Erosion of natural deposits in watershed
Boron	mg/L	0.006	0.012	0.009	5	Naturally occurring; leaching or runoff from industrial use
Bromate	mg/L	<0.01			0.01	Possible contamination in hypochlorite solution
Bromoxynil	mg/L	<0.0002			0.005	Leaching and/or runoff from agricultural use
Cadmium	mg/L	<0.0005			0.005	Erosion of natural deposits in watershed
Calcium	mg/L	49	72	55	No Guidelines	Erosion of natural deposits in watershed
Carbaryl	mg/L	<0.002			0.09	Leaching and/or runoff from agricultural use
Carbofuran	mg/L	<0.0005			0.09	Leaching and/or runoff from agricultural use
Carbonate	mg/L as CaCO ₃	<20			No Guidelines	Erosion of natural deposits in watershed
Carbon Tetrachloride	mg/L	<0.0005			0.002	Industrial effluents and leaching from hazardous waste sites
Chloramines, Total ³	mg/L	<0.10			3	Formed in the presence of both chlorine and ammonia
Chlorate	mg/L	<0.10			1	Possible contamination in hypochlorite solution
γ-Chlordane	mg/L	<0.00001			No Guidelines	Leaching and/or runoff from agricultural use
Chloride	mg/L	6.3	21	11.1	250 (A)	Naturally occurring, dissolved salt deposits, highway salt
Chlorine, free	mg/L	0.80	1.41	1.09	No Guidelines	Plant treatment
Chlorite	mg/L	<0.10			1	Possible contamination in hypochlorite solution
Chlorpyrifos	mg/L	<0.001			0.09	Leaching and/or runoff from agricultural use
Chromium	mg/L	<0.0005	0.001	<0.0005	0.05	Erosion of natural deposits in watershed



City of Calgary Bearspaw Water Treatment Plant Summary

January 1, 2019 to December 31, 2019

PARAMETER	UNITS	Bearspaw Treated Water (Entering the Distribution System)			Maximum Acceptable Concentration or Guideline ¹	Common Source
		Minimum	Maximum	Average		
Cobalt	mg/L	<0.0005			No Guidelines	Erosion of natural deposits in watershed
Coliforms, <i>E.coli</i>	MPN/100mL	<1	<1	<1	0	Domestic animals, wildlife and human waste
Coliforms, Total	MPN/100mL	<1	<1	<1	0	Soil, domestic animals and wildlife.
Color	TCU	<2			15 (A)	Erosion of natural deposits in watershed
Conductivity at 25°C	uS/cm	363	531	443	No Guidelines	Leaching and/or runoff from agricultural use
Copper	mg/L	<0.0005	0.022	0.0011	² 1.0 (A)	Erosion of natural deposits in watershed
Cryptosporidium	oocysts/100L	Not Tested			Treatment Goal	Domestic animals, wildlife and human waste
Cryptosporidium, Min. Log Reduction Ratio ³	no units	1.33			Treatment Goal	Domestic animals, wildlife and human waste
Cyanazine	mg/L	<0.001			No Guidelines	Run off from agricultural or other uses
Cyanide	mg/L	<0.002			0.2	Industrial and mining effluents; Release from organic compounds
Cyanobacterial toxins – total microcystin	mg/L	0.00014	0.00016	0.00015	0.0015	Naturally occurring; released from blooms of blue-green algae
Diazinon	mg/L	<0.001			0.02	Run off from agricultural or other uses
Dicamba	mg/L	<0.0002			0.12	Leaching and/or runoff from agricultural use
1,2-Dichlorobenzene	mg/L	<0.0005			0.2	Releases or spills from industrial use
1,4-Dichlorobenzene	mg/L	<0.0005			0.005	Releases or spills from industrial use
2,4-DDT	mg/L	<0.00001			No Guidelines	Leaching and/or runoff from agricultural use
4,4'-DDT	mg/L	<0.00001			No Guidelines	Leaching and/or runoff from agricultural use
1,1-Dichloroethylene	mg/L	<0.0005			0.014	Releases or spills from industrial use
1,2-Dichloroethane	mg/L	<0.0005			0.005	Releases or spills from industrial use
Dichloromethane	mg/L	<0.005			0.05	Industrial and municipal wastewater discharges
2,4-Dichlorophenol	mg/L	<0.0005			0.9	By-product of chlorination
2,4-D	mg/L	<0.0002			0.1	Leaching and/or runoff from use as a weed controller
Diclofop-methyl	mg/L	<0.0001			0.009	Leaching and/or runoff from use as a weed controller
Dimethoate	mg/L	<0.001			0.02	Leaching and/or runoff from agricultural use
Diquat	mg/L	<0.007			0.07	Leaching and/or runoff from agricultural use
Diuron	mg/L	<0.001			0.15	Leaching and/or runoff from use in controlling vegetation
Endrin	mg/L	<0.00001			No Guidelines	Leaching and/or runoff from agricultural use



City of Calgary Bearspaw Water Treatment Plant Summary

January 1, 2019 to December 31, 2019

PARAMETER	UNITS	Bearspaw Treated Water (Entering the Distribution System)			Maximum Acceptable Concentration or Guideline ¹	Common Source
		Minimum	Maximum	Average		
Ethylbenzene	mg/L	<0.0005			0.14 0.0016 (A)	Emissions, effluents or spills from petroleum and chemical industries
Extractable Hydrocarbons	mg/L	<0.01			No Guidelines	Releases or spills from industrial use
Fluoride	mg/L	0.10	0.27	0.20	1.5	Erosion of natural deposits in watershed ²
Giardia	cysts/100L	Not Tested			Treatment Goal	Domestic animals, wildlife and human waste
Giardia, Min. Log Reduction Ratio ³	no units	1.98	9.83	3.87	Treatment Goal	Domestic animals, wildlife and human waste
Glyphosate	mg/L	<0.005			0.28	Leaching and/or runoff from use as a weed controller
Gross Alpha	Bq/L	<0.20			0.5	Naturally occurring; emissions from nuclear reactors
Gross Beta	Bq/L	<0.11	0.12	<0.11	1.0	Naturally occurring; emissions from nuclear reactors
Haloacetic Acids, Total	mg/L				0.08 (Annual Average)	By-product of chlorination
Hardness	mg/L as CaCO ₃	174	267	214	No Guidelines	Erosion of natural deposits in watershed
Heptachlor + heptachlor epoxide	mg/L	<0.0001			No Guidelines	Leaching and/or runoff from agricultural use
Iron	mg/L	<0.010	0.013	<0.010	0.3 (A)	Erosion of natural deposits in watershed.
Lead	mg/L	<0.0005			0.005	Leaching from plumbing (pipes, solders, brass fittings, and lead service lines)
Lindane	mg/L	<0.00001			No Guidelines	Leaching and/or runoff from agricultural use
Lithium	mg/L	0.0030	0.0049	0.0040	No Guidelines	Releases or spills from industrial use
Magnesium	mg/L	12.3	21.2	16.1	No Guidelines	Erosion of natural deposits in watershed
Malathion	mg/L	<0.001			0.19 0.12	Leaching and/or runoff from agricultural and other uses
Manganese	mg/L	<0.0005	0.0019	<0.0005	0.02 (A)	Erosion of natural deposits in watershed.
MCPA (2-methyl-4-chlorophenoxyacetic acid)	mg/L	<0.00002			0.1	Leaching and/or runoff from agricultural and other uses
MCPP (methylchlorophenoxy propionic acid)	mg/L	<0.00008			0.015 (A)	Leaching and/or runoff from agricultural and other uses
Mercury	mg/L	<0.000002			0.001	Erosion of natural deposits in watershed
Methyl parathion	mg/L	<0.001			No Guidelines	Leaching and/or runoff from agricultural use
Methoxychlor	mg/L	<0.00001				
Metolachlor	mg/L	<0.001			0.05	Leaching and/or runoff from agricultural and other uses
Metribuzin	mg/L	<0.001			0.08	Leaching and/or runoff from agricultural use



City of Calgary Bearspaw Water Treatment Plant Summary

January 1, 2019 to December 31, 2019

PARAMETER	UNITS	Bearspaw Treated Water (Entering the Distribution System)			Maximum Acceptable Concentration or Guideline ¹	Common Source
		Minimum	Maximum	Average		
Mirex	mg/L	<0.00001			No Guidelines	Leaching and/or runoff from agricultural use
Molybdenum	mg/L	0.0006	0.0011	0.0007	No Guidelines	Leaching and/or runoff from industrial, agricultural and other uses
Monochlorobenzene	mg/L	<0.0005			0.08	Releases or spills from industrial effluents
MTBE (methyl tertiary-butyl ether)	mg/L	<0.0005			0.015 (A)	Spills from gasoline refineries, filling stations and gasoline powered boats; seepage into groundwater from leaking storage tanks
Nickel	mg/L	<0.0005	0.0046	<0.0005	No Guidelines	Leaching from plumbing (pipes, solders, and brass fittings)
Nitrate	mg/L as N	<0.005	0.23	0.09	10	Erosion of natural deposits in watershed
Nitrite	mg/L as N	<0.005			1	Erosion of natural deposits in watershed
Nitriiotriacetic acid (NTA)	mg/L	<0.0002			0.4	Sewage contamination
N-Nitrosodimethylamine (NDMA)	mg/L	<0.0000022			0.00004	By-product of chlorination; industrial and sewage treatment plant
Nitrogen, total (TKN)	mg/L	<0.10	0.25	<0.10	No Guidelines	Erosion of natural deposits in watershed
Odour	Scale = 0-12	6	11	10	Inoffensive	Biological, industrial, or treatment disinfection sources
Paraquat	mg/L	<0.001			0.01	Leaching and/or runoff from agricultural and other uses
Parathion	mg/L	<0.002			0.05	Leaching and/or runoff from agricultural use
Pentachlorophenol	mg/L	<0.0005			0.06	By-product of chlorination
Perfluorooctane Sulfonate (PFOS)	mg/L	<0.00001			0.0006	Synthetic chemical used in consumer products and fire-fighting foams for their water and oil repellent properties
Perfluorooctanoic Acid (PFOA)	mg/L	<0.00001			0.0002	Synthetic chemical used in consumer products and fire-fighting foams for their water and oil repellent properties
Pesticides, total	mg/L	<0.01			No Guidelines	Leaching and/or runoff from agricultural use
pH	pH units	7.1	8.0	7.6	7.0 - 10.5 (O) 6.5-8.5 (AEP)	Influenced by the dissolved minerals in the water, temperature and water treatment processes
Phorate	mg/L	<0.0005			0.002	Leaching and/or runoff from agricultural and other uses
Phosphorus, Total	mg/L	<0.001	0.005	0.002	No Guidelines	Leaching and/or runoff from agricultural and other uses
Phthalate Esters	mg/L	<0.01			No Guidelines	Industrial effluents or spills
Picloram	mg/L	<0.0002			0.19	Leaching and/or runoff from agricultural and other uses
Potassium	mg/L	0.7	2.2	1.1	No Guidelines	Erosion of natural deposits in watershed
Polycyclic Aromatic Hydrocarbons ³ (PAH)	mg/L	<0.0001			No Guidelines	Industrial sources



City of Calgary Bearspaw Water Treatment Plant Summary

January 1, 2019 to December 31, 2019

PARAMETER	UNITS	Bearspaw Treated Water (Entering the Distribution System)			Maximum Acceptable Concentration or Guideline ¹	Common Source
		Minimum	Maximum	Average		
Selenium	mg/L	<0.0005	0.0009	<0.0005	0.05	Naturally occurring (erosion and weathering of rocks and soils) and release from coal ash from coal-fired power plants and mining, refining of copper and other metals
Silicon, dissolved	mg/L	0.87	2.37	1.78	No Guidelines	Erosion of natural deposits in watershed
Silver	mg/L	<0.001			No Guidelines	Naturally occurring (erosion and weathering of rocks and soils)
Simazine	mg/L	<0.001			0.01	Leaching and/or runoff from agricultural and other uses
Sodium	mg/L	5.7	14.2	8.5	200 (A)	Erosion of natural deposits in watershed
Strontium	mg/L	0.286	0.495	0.395	7.0	Erosion of natural deposits in watershed
Sulphate	mg/L	56	95	74	500 (A)	Erosion of natural deposits in watershed
Sulphide	mg/L as H ₂ S	<0.002			0.05 (A)	Can occur in the distribution system from the reduction of sulphates by sulphate-reducing bacteria; industrial wastes
Taste	mg/L	Not Tested			Inoffensive (A)	Biological or industrial sources
Temperature	°C	4.0	20.7	10.1	15 (A)	Surface water temperature
Terbufos	mg/L	<0.0005			0.001	Leaching and/or runoff from agricultural and other uses
Tetrachloroethylene	mg/L	<0.0005			0.01	Industrial effluents or spills
2,3,4,6-Tetrachlorophenol	mg/L	<0.0005			0.1	By-product of chlorination; industrial effluents and use of pesticides
Thallium	mg/L	<0.0005			No Guidelines	Erosion of natural deposits in watershed.
Tin	mg/L	<0.0005			No Guidelines	Industrial effluents or spills
Titanium	mg/L	<0.0005			No Guidelines	Industrial effluents or spills
Toluene	mg/L	<0.0005			0.06	Emissions, effluents or spills from petroleum and chemical industries
Total Dissolved Solids	mg/L	231	317	266	500 (A)	Erosion of natural deposits in watershed
Total Organic Carbon	mg/L	0.6	3.0	1.4	No Guidelines	Erosion of natural deposits in watershed
Triallate	mg/L	<0.001			No Guidelines	Leaching and/or runoff from agricultural and other uses
Trichloroethylene	mg/L	<0.0005			0.005	Industrial effluents and spills from improper disposals
2,4,6-Trichlorophenol	mg/L	<0.0005			0.002 (A)	By-product of chlorination; industrial effluents and spills
2,4,5-T	mg/L	<0.0002			No Guidelines	Leaching and/or runoff from agricultural and other uses
Trichlorophenoxypropionic Acid (2,4,5-TP)	mg/L	<0.0002			No Guidelines	Leaching and/or runoff from use in controlling vegetation
Trifluralin	mg/L	<0.001			0.045	Runoff from agricultural uses



City of Calgary Bearspaw Water Treatment Plant Summary

January 1, 2019 to December 31, 2019

PARAMETER	UNITS	Bearspaw Treated Water (Entering the Distribution System)			Maximum Acceptable Concentration or Guideline ¹	Common Source
		Minimum	Maximum	Average		
Total Trihalomethanes ³ (TTHMs)	mg/L			0.0167	0.1 (Annual Average)	By-product of chlorination
Turbidity	NTU	<0.05	0.08	<0.05	0.15	Suspended particles in solution
Uranium	mg/L	<0.0005	0.0006	<0.0005	0.02	Industrial effluents or spills
Vanadium	mg/L	<0.0005	0.0007	<0.0005	No Guideline	Naturally occurring (erosion and weathering of rocks and soils)
Vinyl Chloride	mg/L	<0.0005			0.002	Industrial effluents; degradation product from organic solvents in groundwater; leaching from polyvinyl chloride pipes
Virus, Min. Log Reduction Ratio ³	no units	1.5			Treatment Goal	Domestic animals, wildlife and human waste
Xylenes, total ³	mg/L	<0.001			0.09 0.02 (A)	Emissions, effluents or spills from petroleum and chemical industries
Zinc	mg/L	<0.003	0.005	<0.003	5.0 (A)	Erosion of natural deposits in watershed. Leaching may occur from galvanized pipes, hot water tanks and brass fittings

Legend

¹ Maximum acceptable concentrations and

Information hyperlinks

[Health Canada Guidelines for Canadian Drinking](#)

[Health Canada Water Quality - Reports and](#)

[Alberta Environment & Parks](#)

² The City of Calgary ceased fluoridation of its drinking water on May 19, 2011.

³ Calculated parameter based on individual analytes

(O) Operating guidance as determined by Health Canada

(A) Aesthetic Objective as determined by Health Canada

(AEP) Alberta Environment and Parks provincial guidance

< Indicates not detected above the specified value

Bq/L = Becquerel per litre

mg/L = milligrams per litre, or parts per million (ppm)

MPN = Most-Probable Number

NTU = Nephelometric Turbidity Units

TCU = True Colour Units

Treatment Goal = Calculated log removals are health based treatment goals for enteric protozoa and viruses as determined by Health Canada.