

# The City of Colstrip Water Treatment Plant 1999 Report to Consumers on Water Quality

*Dear Customer:* We're pleased to present to you this year's Annual Quality Water Report. This report is designed to inform you about the quality of water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. Although operated by Colstrip Community Services Company for most of 1999, you can see from the title of this report we are now "The City of" after taking ownership of the treatment plants late in the year. We remain committed to ensuring the quality of your water. This report shows our water quality and what it means.

## **The Colstrip Water Treatment Plant's drinking water meets or surpasses all federal and state drinking-water standards.**

If you have any questions about this report or concerning your water utility, please contact **John Bleth [748-2300]** or **Bryan Swan [748-3924]**. We want our valued customers to be informed about their water utility. Call us for information about the next opportunity for public participation in decisions about our drinking water.

### **Overview**

Our treatment process includes coagulation through the addition of aluminum sulfate, cationic and nonionic polymers. The water is filtered with dual media, anthrasite coal and sand, filters. Fluoride is added to fight tooth decay. Activated carbon is also applied to help remove undesirable tastes and odors. Disinfection is the final step with the addition of chlorine, a very effective disinfecting agent. A chlorine "residual" must be maintained throughout the distribution system to insure safety for the consumer. Although we have received some complaints due to taste and odor problems, the safety of our water has never been in question. Tastes and odors are difficult and expensive to control. Because of its shallow design and a short circuiting problem due to the intake and outtake structures being too close together, Castle Rock Lake is very susceptible to algae blooms, the main source of taste and odor problems in our system. Since the alga also tends to clog the filters, we monitor it very closely and treat the lake usually once or twice per summer to control the blooms. We began adding activated carbon to the filtration process in 1995 after a particularly bad algae bloom and have continued with great success. You will also see city personnel flushing fire hydrants from time to time. This "flushing" also helps minimize taste and odors which can originate in the distribution system.

### **Water Source**

PP&L Montana pumps water from the Yellowstone River six miles west of Forsyth to Castle Rock Lake. Our system draws surface water from Castle Rock Lake and is treated at The Colstrip Water Treatment Plant.

### **An Explanation of the Water-Quality Data Table**

**The Colstrip Water Treatment Plant** routinely monitors for constituents in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 1999.

Some of our data in the tables are more than one year old, since certain chemical contaminants are monitored less than once a year. Our sampling frequency complies with EPA and State drinking water regulations. We have included the entire table to demonstrate the number of constituents tested for and not detected. If the Highest Detectable Limit column is left blank it is because there were no detects for this constituent or unless indicated otherwise.

In this table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

*Non-Detects (ND)* - laboratory analysis indicates that the constituent is not present.

*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* - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

*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.

*Variances & Exemptions (V&E)* - State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

*Action Level* - 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* - The “Maximum Allowed” (MCL) 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.

*Maximum Contaminant Level Goal* - The “Goal”(MCLG) 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.

<b>TEST RESULTS</b>								
Contaminant	Violation Y/N	Sample Date	Highest Level Detected	Range Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
<b>Microbiological Contaminants</b>								
1. Total Coliform Bacteria	N	monthly				0	presence of coliform bacteria in 5% of monthly samples	Naturally present in the environment
2. Fecal coliform and <i>E.coli</i>		N/a				0	a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or <i>E. coli</i> positive	Human and animal fecal waste
3. Turbidity	N	daily	.360	.036-.360		n/a	TT	Soil runoff
<b>Radioactive Contaminants</b>								
4. Beta/photon emitters		N/a			mrem/yr	0	4	Decay of natural and man-made deposits
5. Alpha emitters		4/11/99			pCi/l	0	15	Erosion of natural deposits
6. Combined radium		N/a			pCi/l	0	5	Erosion of natural deposits
<b>Inorganic Contaminants</b>								

7. Antimony		12/01/98			ppb	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
8. Arsenic		12/01/98			ppb	n/a	50	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
9. Asbestos		N/a			MFL	7	7	Decay of asbestos cement water mains; erosion of natural deposits
10. Barium		12/01/98			ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
11. Beryllium		12/01/98			ppb	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
12. Cadmium		12/01/98			ppb	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
13. Chromium		12/01/98			ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
14. Copper		09/09/97	.29		ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
15. Cyanide		12/01/98			ppb	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
16. Fluoride		monthly	1.22	.68-1.22	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
17. Lead		09/09/97	.006	0-6.0	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
18. Mercury (inorganic)		12/01/98			ppb	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
19. Nitrate (as Nitrogen) Nitrite was included as Total Nitrogen		11/01/99			ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
20. Nitrite (as Nitrogen) Nitrate was included as Total Nitrogen		11/01/99			ppm	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
21. Selenium		12/01/98			ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
22. Thallium		12/01/98			ppb	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories

**Synthetic Organic Contaminants including Pesticides and Herbicides**

23. 2,4-D		12/01/98		ppb	70	70	Runoff from herbicide used on row crops
24. 2,4,5-TP (Silvex)		12/01/98		ppb	50	50	Residue of banned herbicide
25. Acrylamide		12/01/98			0	TT	Added to water during sewage/wastewater treatment
26. Alachlor		12/01/98		ppb	0	2	Runoff from herbicide used on row crops
27. Atrazine		12/01/98		ppb	3	3	Runoff from herbicide used on row crops
28. Benzo(a)pyrene (PAH)		12/01/98		nanograms/l	0	200	Leaching from linings of water storage tanks and distribution lines
29. Carbofuran		12/01/98		ppb	40	40	Leaching of soil fumigant used on rice and alfalfa
30. Chlordane		12/01/98		ppb	0	2	Residue of banned termiticide
31. Dalapon		12/01/98		ppb	200	200	Runoff from herbicide used on rights of way
32. Di(2-ethylhexyl) adipate		12/01/98		ppb	400	400	Discharge from chemical factories
33. Di(2-ethylhexyl) phthalate		12/01/98		ppb	0	6	Discharge from rubber and chemical factories
34. Dibromochloropropane		12/01/98		nanograms/l	0	200	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
35. Dinoseb		12/01/98		ppb	7	7	Runoff from herbicide used on soybeans and vegetables
36. Diquat		12/01/98		ppb	20	20	Runoff from herbicide use
37. Dioxin [2,3,7,8-TCDD]		12/01/98		picograms/l	0	30	Emissions from waste incineration and other combustion; discharge from chemical factories
38. Endothall		12/01/98		ppb	100	100	Runoff from herbicide use
39. Endrin		12/01/98		ppb	2	2	Residue of banned insecticide
40. Epichlorohydrin		12/01/98			0	TT	Discharge from industrial chemical factories; an impurity of some water treatment chemicals
41. Ethylene dibromide		12/01/98		nanograms/l	0	50	Discharge from petroleum refineries
42. Glyphosate		12/01/98		ppb	700	700	Runoff from herbicide use
43. Heptachlor		12/01/98		nanograms/l	0	400	Residue of banned termiticide
44. Heptachlor epoxide		12/01/98		nanograms/l	0	200	Breakdown of heptachlor
45. Hexachlorobenzene		12/01/98		ppb	0	1	Discharge from metal refineries and agricultural chemical factories
46. Hexachlorocyclopentadiene		12/01/98		ppb	50	50	Discharge from chemical factories
47. Lindane		12/01/98		nanograms/l	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens
48. Methoxychlor		12/01/98		ppb	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
49. Oxamyl [Vydate]		12/01/98		ppb	200	200	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
50. PCBs [Polychlorinated biphenyls]		12/01/98		nanograms/l	0	500	Runoff from landfills; discharge of waste chemicals
51. Pentachlorophenol		12/01/98		ppb	0	1	Discharge from wood preserving factories
52. Picloram		12/01/98		ppb	500	500	Herbicide runoff
53. Simazine		12/01/98		ppb	4	4	Herbicide runoff
54. Toxaphene		12/01/98		ppb	0	3	Runoff/leaching from insecticide used on cotton and cattle

### **Volatile Organic Contaminants**

55. Benzene		12/01/98			ppb	0	5	Discharge from factories; leaching from gas storage tanks and landfills
56. Carbon tetrachloride		12/01/98			ppb	0	5	Discharge from chemical plants and other industrial activities
57. Chlorobenzene		12/01/98			ppb	100	100	Discharge from chemical and agricultural chemical factories
58. o-Dichlorobenzene		12/01/98			ppb	600	600	Discharge from industrial chemical factories
59. p-Dichlorobenzene		12/01/98			ppb	75	75	Discharge from industrial chemical factories
60. 1,2-Dichloroethane		12/01/98			ppb	0	5	Discharge from industrial chemical factories
61. 1,1 - Dichloroethylene		12/01/98			ppb	7	7	Discharge from industrial chemical factories
62. cis-1,2- Dichloroethylene		12/01/98			ppb	70	70	Discharge from industrial chemical factories
63. trans - 1,2 - Dichloroethylene		12/01/98			ppb	100	100	Discharge from industrial chemical factories
64. Dichloromethane		12/01/98			ppb	0	5	Discharge from pharmaceutical and chemical factories
65. 1,2-Dichloropropane		12/01/98			ppb	0	5	Discharge from industrial chemical factories
66. Ethylbenzene		12/01/98			ppb	700	700	Discharge from petroleum refineries
67. Styrene		12/01/98			ppb	100	100	Discharge from rubber and plastic factories; leaching from landfills
68. Tetrachloroethylene		12/01/98			ppb	0	5	Leaching from PVC pipes; discharge from factories and dry cleaners
69. 1,2,4-Trichlorobenzene		12/01/98			ppb	70	70	Discharge from textile-finishing factories
70. 1,1,1 - Trichloroethane		12/01/98			ppb	200	200	Discharge from metal degreasing sites and other factories
71. 1,1,2 - Trichloroethane		12/01/98			ppb	3	5	Discharge from industrial chemical factories
72. Trichloroethylene		12/01/98			ppb	0	5	Discharge from metal degreasing sites and other factories
73. TTHM [Total trihalomethanes]		12/01/98	<.639		ppb	0	100	By-product of drinking water chlorination
74. Toluene		12/01/98			ppm	1	1	Discharge from petroleum factories
75. Vinyl Chloride		12/01/98			ppb	0	2	Leaching from PVC piping; discharge from plastics factories
76. Xylenes		12/01/98			ppm	10	10	Discharge from petroleum factories; discharge from chemical factories

As you can see by the table, our system had no violations. We're proud that your drinking water meets or exceeds all Federal and State requirements. We have learned through our monitoring and testing that some constituents have been detected. The EPA has determined that your water IS SAFE at these levels.

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

## Unregulated Contaminants

The Colstrip Water Treatment Plant did not test for Cryptosporidium.

The Colstrip Water Treatment Plant did not test for Radon.

## Required Additional Health Information

To ensure that tap water is safe to drink, EPA prescribes limits on the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled 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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

All 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 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:

(A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

(B) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

(C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, stormwater runoff, and residential uses.

(D) Organic chemical contaminants, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.

(E) Radioactive contaminants, which 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, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Some people may be more vulnerable to contaminants in drinking water than is 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 from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Safe Drinking Water Hotline (800-426-4791).

In our continuing efforts to maintain a safe and dependable water supply it may be necessary to make improvements in your water system. The costs of these improvements may be reflected in the rate structure. Rate adjustments may be necessary in order to address these improvements.

Please call our office if you have questions.

We at The Colstrip Water Treatment Plant work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.