2006 Annual Drinking Water Quality Report

For

Central Wyoming Regional Water System

1500 SW Wyoming Blvd.

Casper WY 82604

(307) 265-6063

We're pleased to present to you this year's Annual Quality Water Report. This report is designed to inform you about the quality 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. We are committed to ensuring the quality of your water. Our water source consists of twenty-nine ground water wells and surface water drawn from the North Platte River.

We are pleased to report to our consumers that our drinking water is **safe** and meets **Federal** and **State** requirements.

If you have any questions about this report or concerning your water utility, please contact **John Naquin, Operations Manager at (307) 265-6063.** We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on **the third Tuesday of every month at 11:30 AM located at 1500 SW Wyoming Blvd.**

Central Wyoming Regional Water System (CWRWS) 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 1st to December 31st, **2006.** As water travels over the land or underground it can pick up substances or contaminants such as microbes, inorganic and organic chemicals, and radioactive substances. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some constituents. It's important to remember that the presence of these constituents does not necessarily pose 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 at 1-800-426-4791.

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 laboratory does not detect the constituent.

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.

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

Treatment Technique (TT) - (mandatory language) A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Maximum Contaminant Level - (mandatory language) The "Maximum Allowed" (MCL) is the highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

This report was generated by Energy Laboratories, Inc. – Casper, Wyoming – February 15, 2007

Maximum Contaminant Level Goal - (mandatory language) The "Goal"(MCLG) is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

TEST RESULTS						
Contaminant	**Violation Y/N**	**Level Detected**	**Unit Measurement**	**MCLG**	**MCL**	**Likely Source of Contamination**
Microbiological Contaminants						
1. Total Coliform Bacteria	N	Negative	N/A	0	Presence of coliform bacteria in 5% of monthly samples	Naturally present in the environment
2. Fecal Coliform and *E.coli*	N	ND	CFU/100 ml	0	a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or *E. coli* positive	Human and animal fecal waste
3. Turbidity	N	0.262	NTU	N/A	0.3	Soil runoff
Cryptosporidium	N	<1	CFU/100 ml	N/A	2-log removal	Animal and human fecal waste
Radioactive Contaminants						
4. Beta/photon emitters	N/A	N/A	Mrem/yr	0	4	Decay of natural and man-made deposits
5. Alpha emitters (Annual Average) SW SP01 GW SP02	N	 ND 6.4	pCi/1	0	15	Erosion of natural deposits
6. Combined radium	N/A	N/A	pCi/1	0	5	Erosion of natural deposits
Inorganic Contaminants						
7. Antimony	N	ND	ppb	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
8. Arsenic	N	ND	ppb	N/A	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
9. Asbestos	N/A	N/A	MFL	7	7	Decay of asbestos cement water mains; erosion of natural deposits
10. Barium	N	ND	ppb	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits

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11. Beryllium	N	ND	ppb	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
12. Cadmium	N	ND	ppb	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
13. Chromium	N	ND	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
14. Copper (Source)	N	ND	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
14A. Copper (Pb&Cu Rule/Tap Monitoring) January to June 2000 July to December 2000	 N N	 0.89 0.75	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
15. Cyanide	N	ND	ppb	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
16. Fluoride SW SP01 GW SP02	N	0.4 0.4	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
17. Lead (Source)	N	ND	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
17. Lead (Pb&Cu Rule) January to June 2000 July to December 2000	 N N	 9 7	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
18. Mercury (inorganic)	N	ND	ppb	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
19. Nitrate (as Nitrogen) SW SP01 GW SP02	N	ND 0.4	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
20. Nitrite (as Nitrogen)	N	ND	ppm	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
21. Selenium SW SP01 GW SP02	N	ND 6	ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
21A. Sodium SW SP01 (Surface Water) GW SP02 (Ground Water)	N	25 47	ppm	None	None	Natural occurring

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22. Thallium	N	ND	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	N	ND	ppb	70	70	Runoff from herbicide used on row crops
24. 2,4,5-TP (Silvex)	N	ND	ppb	50	50	Residue of banned herbicide
25. Acrylamide	N	ND	ppb	0	TT	Added to water during sewage/wastewater treatment
26. Alachlor	N	ND	ppb	0	2	Runoff from herbicide used on row crops
27. Atrazine	N	ND	ppb	3	3	Runoff from herbicide used on row crops
28. Benzo(a)pyrene (PAH)	N	ND	Nanograms/l	0	200	Leaching from linings of water storage tanks and distribution lines
29. Carbofuran	N	ND	ppb	40	40	Leaching of soil fumigant used on rice and alfalfa
30. Chlordane	N	ND	ppb	0	2	Residue of banned termiticide
31. Dalapon	N	ND	ppb	200	200	Runoff from herbicide used on rights of way
32. Di(2-ethylhexyl) adipate	N	ND	ppb	400	400	Discharge from chemical factories
33. Di(2-ethylhexyl) phthalate	N	ND	ppb	0	6	Discharge from rubber and chemical factories
34. Dibromochloropropane	N	ND	Nanograms/1	0	200	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
35. Dinoseb	N	ND	ppb	7	7	Runoff from herbicide used on soybeans and vegetables
36. Diquat	N	ND	ppb	20	20	Runoff from herbicide use
37. Dioxin [2,3,7,8-TCDD]	N/A	N/A	Picograms/l	0	30	Emissions from waste incineration and other combustion; discharge from chemical factories
38. Endothall	N	ND	ppb	100	100	Runoff from herbicide use
39. Endrin	N	ND	ppb	2	2	Residue of banned insecticide
40. Epichlorohydrin	N	ND	ppb	0	TT	Discharge from industrial chemical factories; an impurity of some water treatment chemicals
41. Ethylene dibromide	N	ND	Nanograms/1	0	50	Discharge from petroleum refineries
42. Glyphosate	N	ND	ppb	700	700	Runoff from herbicide use
43. Heptachlor	N	ND	Nanograms/1	0	400	Residue of banned termiticide

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44. Heptachlor epoxide	N	ND	Nanograms/1	0	200	Breakdown of heptachlor
45. Hexachlorobenzene	N	ND	ppb	0	1	Discharge from metal refineries and agricultural chemical factories
46. Hexachlorocyclo-pentadiene	N	ND	ppb	50	50	Discharge from chemical factories
47. Lindane	N	ND	Nanograms/l	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens
48. Methoxychlor	N	ND	ppb	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
49. Oxamyl [Vydate]	N	ND	ppb	200	200	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
50. PCBs [Polychlorinated biphenyls]	N	ND	Nanograms/1	0	500	Runoff from landfills; discharge of waste chemicals
51. Pentachlorophenol	N	ND	ppb	0	1	Discharge from wood preserving factories
52. Picloram	N	ND	ppb	500	500	Herbicide runoff
53. Simazine	N	ND	ppb	4	4	Herbicide runoff
54. Toxaphene	N	ND	ppb	0	3	Runoff/leaching from insecticide used on cotton and cattle

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Volatile Organic Contaminants						
55. Benzene	N	ND	ppb	0	5	Discharge from factories; leaching from gas storage tanks and landfills
56. Carbon tetrachloride	N	ND	ppb	0	5	Discharge from chemical plants and other industrial activities
57. Chlorobenzene	N	ND	ppb	100	100	Discharge from chemical and agricultural chemical factories
58. o-Dichlorobenzene	N	ND	ppb	600	600	Discharge from industrial chemical factories
59. p-Dichlorobenzene	N	ND	ppb	75	75	Discharge from industrial chemical factories
60. 1,2 - Dichloroethane	N	ND	ppb	0	5	Discharge from industrial chemical factories
61. 1,1 – Dichloroethylene	N	ND	ppb	7	7	Discharge from industrial chemical factories
62. cis-1,2-Dichloroethylene	N	ND	ppb	70	70	Discharge from industrial chemical factories
63. trans - 1,2 – Dichloroethylene	N	ND	ppb	100	100	Discharge from industrial chemical factories
64. Dichloromethane	N	ND	ppb	0	5	Discharge from pharmaceutical and chemical factories

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65. 1,2-Dichloropropane	N	ND	ppb	0	5	Discharge from industrial chemical factories
66. Ethylbenzene	N	ND	ppb	700	700	Discharge from petroleum refineries
67. Styrene	N	ND	ppb	100	100	Discharge from rubber and plastic factories; leaching from landfills
68. Tetrachloroethylene	N	ND	ppb	0	5	Leaching from PVC pipes; discharge from factories and dry cleaners
69. 1,2,4 – Trichlorobenzene	N	ND	ppb	70	70	Discharge from textile-finishing factories
70. 1,1,1 - Trichloroethane	N	ND	ppb	200	200	Discharge from metal degreasing sites and other factories
71. 1,1,2 –Trichloroethane	N	ND	ppb	3	5	Discharge from industrial chemical factories
72. Trichloroethylene	N	ND	ppb	0	5	Discharge from metal degreasing sites and other factories
73. Toluene	N	ND	ppm	1	1	Discharge from petroleum factories
74. Vinyl Chloride	N	ND	ppb	0	2	Leaching from PVC piping; discharge from plastics factories
75. Xylenes	N	ND	ppm	10	10	Discharge from petroleum factories; discharge from chemical factories

TEST RESULTS						
Contaminant	**Violation Y/N**	**Level Detected**	**Unit Measurement**	**MCLG**	**MCL**	**Likely Source of Contamination**
Disinfectants and Disinfection Byproducts						
TTHM (Total trihalomethanes) Highest Running Annual Average	N	2.14	ppb	N/A	80	By-product of drinking water chlorination
HAA5 (Haloacetic Acids) Highest Running Annual Average	N	5.67	ppb	N/A	60	By-product of drinking water chlorination
Bromide (Source Water) Running Annual Average	N	0.060	ppm	n/a	n/a	Natural occurring
Bromate (Source Water) Running Annual Average	N	0.0026	ppm	0	0.01	Bromate is a by-product of using Ozone as a disinfectant if Bromide is present in the source water.
Average TOC (Total Organic Carbon) Filter Effluent N.P. River	N	1.6 5.0	ppm	N/A	N/A	Natural occurring
Chloramine Residual Running Annual Average	N	2.49	ppm	N/A	4.0	By-product of drinking water chlorination

What does this mean?

As you can see by the table, our system had no MCL 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.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During May 2006 we failed to monitor for monthly surface water bromate, and therefore cannot be sure of the quality of our drinking water during that time.

Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer. Historic monitoring has shown that the level of bromate in our water is below the MCL.

We constantly monitor the water supply for various contaminants. In May through September of 2002, we had 39 groundwater and 2 filtered surface water samples tested for Giardia and Cryptosporidium. These samples were analyzed using the ICR method with variations in the flotation-separation steps and staining steps, which have been shown to enhance recovery of cysts and oocysts. No fluorescing objects resembling Giardia cysts or Cryptosporidium oocysts were observed in the sample. This does not mean that any cysts or oocysts were present in the sample, only that none were present in the portion examined.

As part of the Interim Enhanced Surface Water Treatment Rule (IESWTR) regulation governing treatment for the pathogen Cryptosporidium (40 CFR Part 141, Subpart P), the U.S. Environmental Protection Agency (EPA) requires a treatment technique for 99% removal of Cryptosporidium. Water Systems using surface water or ground water under the direct influence of surface water (GWUDI) must comply with this new treatment technique starting in January 2002.

Currently, the CWRWS utilizes GWUDI from collection devices along the North Platte River: vertical wells and horizontal wells or caissons. This water is not treated in a filtration plant, but it is ozonated and disinfected with chloramines. Alternative filtration occurs through these devices, such as riverbank filtration occurring from the wells. On December 10, 2001, EPA granted conditional removal credit to the CWRWS GWUDI system while a detailed study was conducted to demonstrate the effectiveness of the alternative filtration technologies to remove *Cryptosporidium*. During the study period, the CWRWS implemented interim measures designed to ensure public health protection. The study was completed and a final report provided to EPA in January 2005.

EPA granted approval to the GWUDI system as an alternative filtration technology on March 18, 2005, based upon the preponderance of these study results, and previous studies and knowledge of the GWUDI system. This decision has been predicated on the primary goals of protecting public health and ensuring compliance with the Safe Drinking Water Act, while utilizing sound science and recognizing cost considerations for the CWRWS. This approval is contingent upon CWRWS complying with several operational and performance requirements to improve pathogen removal, including abandoning or filtering water from the infiltration gallery, and ongoing monitoring of water quality. The CWRWS will also continue to provide inactivation of this GWUDI water with ozonation and chloramines, and will meet all other monitoring and treatment technique requirements of the surface water treatment rules.

As part of the Long Term 2 Enhanced Surface Water Treatment Rule, 38 river water source samples were taken by the Central Wyoming Regional Water System from January 2002 thru September 2004. These samples were analyzed for Cryptosporidium using method 1623 by an EPA approved laboratory. The highest 12 month running average shows 0.016 crypto/liter. These results indicate a classification of bin 1 for the Long Term 2 Enhanced Surface Water Treatment Rule for the Central Wyoming Regional Water System. This indicates that no additional treatment to the river water will be required by this rule.

Some of our data in the tables is more than one year old, since certain chemical contaminants are monitored less than once a year. Our sampling frequency complies with EPA drinking water regulations.

The sources of drinking water include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels

over the surface of the land or through the ground, it can dissolve naturally occurring minerals and, in some cases, radioactive materials. The water can also pick up substances such as:

1) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural operations and wildlife.
2) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic waste water discharges, oil and gas production, mining or farming.
3) Pesticides and Herbicides, which may come from agriculture, urban storm water runoff, and residential uses.
4) Organic chemical contaminants, which can come from industrial processes, gas stations, urban storm water runoff and septic systems.
5) Radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

In order to insure that tap water is safe to drink, EPA establishes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration establishes limits for contaminants in bottled water.

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 a half gallon 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.

Some people may be more vulnerable to contaminants in drinking water than 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 and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791) or EPA (800-227-8917).

We at the Central Wyoming Regional Water System 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.