



Brush!

City of Brush! 2012 Drinking Water Consumer Confidence Report for Calendar Year 2011

PWSID # CO0144001

Esta es informacion importante. Si no la pueden leyer, necesitan que alguin se la traducean.

We are 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. Our water source is from groundwater wells, located south of Brush. Their depths range from 100 to 163 feet deep and draw from the Beaver Creek Aquifer.

In an effort to make sure that this report is available to all of our customers, we ask that this report be shared with everyone at this address. Please make this report available to all renters and residents that do not receive their water bill directly from the City of Brush. Extra copies of this report are available at City Hall at no cost.

If you have any questions about this report or concerning your water utility, please contact our Water Foreman, Don Marymee, at City Hall. The phone number is (970) 842-5001. We want our valued customers to be informed about their water utility. If you want to learn more, City Council meetings are held at 7:00 p.m. at Brush City Hall every second and fourth Monday. City Council meetings can also be seen on cable T.V. channel 10.

The City of Brush has waivers from testing for dioxin, cyanide, and asbestos.

Violations: The City of Brush had no violations in 2011.

The City of Brush routinely monitors for constituents in your drinking water according to Federal and State laws. Some items are tested for every three years because it is unlikely to find them present in significant levels. Some items are monitored yearly and monthly because their levels have the potential to change quickly. The following table shows the latest results of our monitoring from 2004 through 2011, and is the City's required report for the period of January 1st to December 31st, 2011. 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. Further information on this subject can be obtained by calling the EPA Safe Drinking Water Hotline at 800-426-4791 or at www.epa.gov/safewater on the Internet.

The Colorado Department of Health and Environment has provided us with a Source Water Assessment Report for our water supply, you may obtain a copy of the report by visiting www.cdphe.state.co.us/wq/sw/swapreports/swapreports.html or by contacting Don Marymee at 970-842-5001

Potential sources of contamination in our source water area come from above ground, below ground and leaking storage tanks, agricultural practices, septic systems, oil and gas wells and road miles.

The Source Water Assessment report provides a screening-level evaluation of potential contamination that **could** occur. It does not mean that the contamination **has or will** occur. We can use this information to evaluate the need to improve our current water treatment capabilities and prepare for future contamination threats. This can help us ensure that quality finished water is delivered to your homes. In addition, the source water assessment results provide a starting point for developing a source water protection plan.

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, in some cases natural 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:

- **Microbial contaminants**, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants**, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- **Pesticides and herbicides** that may come from a variety of sources, such as agriculture, urban stormwater runoff, and residential uses.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and also may come from gas stations, urban stormwater runoff, and septic systems.
- **Radioactive contaminants**, that 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 provides the same protection for public health. In the following 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 ($\mu\text{g/l}$) - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Parts per trillion (ppt) or Nanograms per liter (nanograms/l) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

Parts per quadrillion (ppq) or Picograms per liter (picograms/l) - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

Million Fibers per Liter (MFL) - million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Not Tested (NT) - because certain contaminants are considered unlikely to be found, or because problematic conditions do not exist.

Nephelometric Turbidity Unit (NTU) - nephelometric (NEFF-el-o-MET-rik) turbidity unit is a measure of the clarity of water (cloudiness). Turbidity in excess of 5 NTU is just noticeable to the average person.

Action Level (AL) - 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 (MCL) - The "Maximum Allowed" 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 (MCLG) - The "Goal" 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.

TEST RESULTS

The state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. Some of our data (e.g., for organic contaminants), though representative, is more than one year old.

Contaminant	Sample Date	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination	
Microbiological Contaminants								
1. Total Coliform Bacteria	01/04/2011	N	absent		0	presence of coliform bacteria in 5% of monthly samples	Naturally present in the environment	
The dates on the right represent a group of three samples taken throughout the distribution system.	1/18/2011	N	absent					
	02/01/2011	N	absent					
	02/15/2011	N	absent					
	03/01/2011	N	absent	present				
	03/08/2011	N	absent	or				
	04/05/2011	N	absent	absent				
	04/12/2011	N	absent					
	05/03/2011	N	absent					
	05/10/2011	N	absent					
	06/07/2011	N	absent					
	06/14/2011	N	absent					
	07/05/2011	N	absent					
	07/12/2011	N	absent					
	08/02/2011	N	absent					
	08/09/2011	N	absent					
	09/06/2011	N	absent					
	09/13/2011	N	absent					
	10/04/2011	N	absent					
	10/11/2011	N	absent					
11/01/2011	N	absent						
11/08/2011	N	absent						
12/06/2011	N	absent						
12/13/2011	N	absent						
2. Fecal coliform and <i>E. Coli</i>	No total coliform in any routine samples Testing not required	N		present or absent	0	if a routine sample & repeat sample are total coliform positive, & one is also fecal or <i>E. Coli</i> positive	Human and animal fecal waste	
3. Turbidity			NT		n/a	TT	Soil runoff	
Radioactive Contaminants								
4. Gross Beta	High Range	01/13/2004	N	3.8+/-2.1	pCi/l	0	50	Decay of natural and man-made deposits
		04/05/2004						
		07/12/2004		0.0+/-1.9-				
		10/14/2004		3.8+/-2.1				
5. Gross Alpha	High Range	01/13/2004	N	4.5+/-2.5	pCi/l	0	15	Erosion of natural deposits
		04/05/2004						
		07/12/2004		0.0+/-1.2-				
		10/14/2004		4.5+/-2.5				
6. Radium 226	High Range	01/13/2004	N	0.7+/-0.6	pCi/l	0	5	Erosion of natural deposits
		04/05/2004						
		07/12/2004		0.0+/-0.2-				
		10/14/2004		0.7+/-0.6				
7. Radium 228	High Range	01/13/2004	N	1.2+/-0.5	pCi/l	0	5	Erosion of natural deposits
		04/05/2004						
		07/12/2004		0.0+/-0.4-				
		10/14/2004		1.2+/-0.5				

Contaminant	Sample Date	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
8. Uranium High Range	01/13/2004 04/05/2004 07/12/2004 10/14/2004	N	4 <0.7-4	ug/l		30	Erosion of natural deposits
Inorganic Contaminants							
9. Antimony High Range	09/01/2009	N	ND ND	ppb	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
10. Arsenic High Range	09/01/2009	N	7.8 ND-7.8	ppb	n/a	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
11. Asbestos	NT			MFL	7	7	Decay of asbestos cement water mains; erosion of natural deposits
12. Barium High Range	09/01/2009	N	0.2 0.092-0.2	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
13. Beryllium High Range	09/01/2009	N	ND ND	ppb	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
14. Cadmium High Range	09/01/2009	N	ND ND	ppb	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
15. Chromium High Range	09/01/2009	N	6.6 3.2-6.6	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
16. Copper - 90th percentile	09/26/2011- 09/28/2011	N	0.047	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
17. Cyanide	NT			ppb	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
18. Fluoride High Range	09/01/2009	N	0.68 ND-0.68	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
19. Lead - 90th percentile	09/26/2011- 09/28/2011	N	1.9	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
20. Mercury (inorganic)	09/01/2009	N	ND	ppb	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
21. Nitrate (as Nitrogen) [the result is nitrate and nitrite combined together]	08/23/2011	N	1.5	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
22. Nitrite (as Nitrogen)	04/15/2003	N	ND	ppm	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
23. Selenium High Range	09/01/2009	N	12 ND-12	ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
24. Thallium	09/01/2009	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							
25. 2,4-D	11/18/2009	N	ND	ppb	70	70	Runoff from herbicide used on row crops
26. 2,4,5-TP (Silvex)	11/18/2009	N	ND	ppb	50	50	Residue of banned herbicide

Contaminant	Sample Date	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
27. Acrylamide	Not Used		NT		0	TT	Added to water during sewage/wastewater treatment
28. Alachlor	11/18/2009	N	ND	ppb	0	2	Runoff from herbicide used on row crops
29. Atrazine	11/18/2009	N	ND	ppb	3	3	Runoff from herbicide used on row crops
30. Benzo(a)pyrene (PAH)	11/18/2009	N	ND	nanograms/l	0	200	Leaching from linings of water storage tanks and distribution lines
31. Carbofuran	11/18/2009	N	ND	ppb	40	40	Leaching of soil fumigant used on rice and alfalfa
32. Chlordane	11/18/2009	N	ND	ppb	0	2	Residue of banned termiticide
33. Dalapon	11/18/2009	N	ND	ppb	200	200	Runoff from herbicide used on rights of way
34. Di (2-ethylhexyl) adipate	11/18/2009	N	ND	ppb	400	400	Discharge from chemical factories
35. Di (2-ethylhexyl) phthalate	11/18/2009	N	ND	ppb	0	6	Discharge from rubber and chemical factories
36. Dibromochloropropane	11/18/2009	N	ND	nanograms/l	0	200	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
37. Dinoseb	11/18/2009	N	ND	ppb	7	7	Runoff from herbicide used on soybeans and vegetables
38. Diquat	11/18/2009	N	ND	ppb	20	20	Runoff from herbicide use
39. Dioxin [2,3,7,8-TCDD]	NT	N		picograms/l	0	30	Emissions from waste incineration and other combustion; discharge from chemical factories
40. Endothall	12/15/2009	N	ND	ppb	100	100	Runoff from herbicide use
41. Endrin	11/18/2009	N	ND	ppb	2	2	Residue of banned insecticide
42. Epichlorohydrin	NT	N			0	TT	Discharge from industrial chemical factories; an impurity of some water treatment chemicals
43. Ethylene dibromide	11/18/2009	N	ND	nanograms/l	0	50	Discharge from petroleum refineries
44. Glyphosate	11/18/2009	N	ND	ppb	700	700	Runoff from herbicide use
45. Heptachlor	11/18/2009	N	ND	nanograms/l	0	400	Residue of banned termiticide
46. Heptachlor epoxide	11/18/2009	N	ND	nanograms/l	0	200	Breakdown of heptachlor
47. Hexachlorobenzene	11/18/2009	N	ND	ppb	0	1	Discharge from metal refineries and agricultural chemical factories
48. Hexachlorocyclopentadiene	11/18/2009	N	ND	ppb	50	50	Discharge from chemical factories
49. Lindane	11/18/2009	N	ND	nanograms/l	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens
50. Methoxychlor	11/18/2009	N	ND	ppb	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
51. Oxamyl [Vydate]	11/18/2009	N	ND	ppb	200	200	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
52. PCBs [Polychlorinated biphenyls]	11/18/2009	N	ND	nanograms/l	0	500	Runoff from landfills; discharge of waste chemicals
53. Pentachlorophenol	11/18/2009	N	ND	ppb	0	1	Discharge from wood preserving factories
54. Picloram	11/18/2009	N	ND	ppb	500	500	Herbicide runoff
55. Simazine	11/18/2009	N	ND	ppb	4	4	Herbicide runoff
56. Toxaphene	11/18/2009	N	ND	ppb	0	3	Runoff/leaching from insecticide used on cotton and cattle
Volatile Organic Contaminants							
57. Benzene	09/01/2009	N	ND	ppb	0	5	Discharge from factories; leaching from gas storage tanks and landfills
58. Carbon tetrachloride	09/01/2009	N	ND	ppb	0	5	Discharge from chemical plants and other industrial activities

Contaminant	Sample Date	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
59. Chlorobenzene	09/01/2009	N	ND	ppb	100	100	Discharge from chemical and agricultural chemical factories
60. o-Dichlorobenzene	09/01/2009	N	ND	ppb	600	600	Discharge from industrial chemical factories
61. p-Dichlorobenzene	09/01/2009	N	ND	ppb	75	75	Discharge from industrial chemical factories
62. 1,2 - Dichloroethane	09/01/2009	N	ND	ppb	0	5	Discharge from industrial chemical factories
63. 1,1 - Dichloroethylene	09/01/2009	N	ND	ppb	7	7	Discharge from industrial chemical factories
64. cis-1,2-Dichloroethylene	09/01/2009	N	ND	ppb	70	70	Discharge from industrial chemical factories
65. trans - 1,2 -Dichloroethylene	09/01/2009	N	ND	ppb	100	100	Discharge from industrial chemical factories
66. Dichloromethane	09/01/2009	N	ND	ppb	0	5	Discharge from pharmaceutical and chemical factories
67. 1,2-Dichloropropane	09/01/2009	N	ND	ppb	0	5	Discharge from industrial chemical factories
68. Ethylbenzene	09/01/2009	N	ND	ppb	700	700	Discharge from petroleum refineries
69. Styrene	09/01/2009	N	ND	ppb	100	100	Discharge from rubber and plastic factories; leaching from landfills
70. Tetrachloroethylene	09/01/2009	N	ND	ppb	0	5	Leaching from PVC pipes; discharge from factories and dry cleaners
71. 1,2,4 - Trichlorobenzene	09/01/2009	N	ND	ppb	70	70	Discharge from textile-finishing factories
72. 1,1,1 - Trichloroethane	09/01/2009	N	ND	ppb	200	200	Discharge from metal degreasing sites and other factories
73. 1,1,2 - Trichloroethane	09/01/2009	N	ND	ppb	3	5	Discharge from industrial chemical factories
74. Trichloroethylene	09/01/2009	N	ND	ppb	0	5	Discharge from metal degreasing sites and other factories
75.TTHM [Total trihalomethanes] *	08/18/2009	N	15.25	ppb	NA	80	By-product of drinking water chlorination.
76.Haloacetic acids	08/18/2009	N	1.98	ppb	NA	60	By-product of drinking water chlorination
76. Toluene	09/01/2009	N	ND	ppm	1	1	Discharge from petroleum factories
77. Vinyl Chloride	09/01/2009	N	ND	ppb	0	2	Leaching from PVC piping; discharge from chemical factories
78. Xylenes	09/01/2009	N	ND	ppm	10	10	Discharge from petroleum factories; discharge from chemical factories

* Chloroform - 0.970, Bromodichloromethane 2.70 µg/l (ppb), Dibromochloroethane - 5.94, Bromoform 5.64 µg/l (ppb)

The City of Brush has waivers for asbestos, cyanide, and dioxin.

OTHER TEST RESULTS

The results of other monitoring from the same time frame that may be useful for persons with certain medical conditions, or may be of general interest.

Contaminant	Sample Date	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Radioactive Contaminants							
1. Radon	11/20/1998		ND	pCi/l			Decay of natural and man-made deposits
Inorganic Contaminants							
2. Total Hardness	06/11/2002		49-200	ppm			Erosion of natural deposits
3. Nickel	09/01/2009		ND	ppm			Erosion of natural deposits
4. Sodium	09/01/2009		3.9-21	ppm			Erosion of natural deposits
5. Sulfate	06/11/2002		8.1-112	ppm			Erosion of natural deposits
6. Total Dissolved Solids	06/11/2002		108-329	ppm			Erosion of natural deposits

Please call our Water Foreman, Don Marymee, at (970) 842-5001 if you have any questions

CROSS-CONNECTION CONTROL

The Colorado Primary Drinking Water Regulations that states a public water system shall have no uncontrolled cross-connections to a pipe, fixture, or supply, any of which contain water not meeting provisions of the drinking water regulations.

A cross-connection is any point in a water distribution system where chemical, biological, or radiological contaminants may come into contact with potable water. During a backflow event, these contaminants can be drawn or pushed back into the potable water system. A backflow prevention device installed at every point of cross-connection prevents contaminated water from entering the potable water distribution system.

Any hazardous cross-connection discovered to be uncontrolled will be corrected within 10 days or the water service will shut off. The Colorado Department of Public Health and Environment will be informed of the hazardous connection and the corrective action being taken.

The City of Brush does require system users to install and maintain backflow prevention devices on potentially hazardous service connections. All service connections within the water system must comply with Article 12 and the *Colorado Cross-Connection Control Manual*.

Each cross-connection may require a different type of backflow prevention device, commensurate with the degree of hazard posed by the cross-connection. Approval for the devices needs to be given by the water system operator or, water system engineer.

The following approved devices can be used for backflow prevention:

- Vacuum breaker
- Double-check valve assembly
- Reduced pressure principal backflow assembly
- Air gap

The Colorado Department of Public Health and Environment accepts the use of backflow preventers that have received approval by either University of Southern California Foundation of Cross-Connection Control and Hydraulic Research or the American Society of Sanitary Engineers (ASSE).

The following is a list of common cross-connections and devices that may be used to prevent backflow:

Type of Cross-Connection	Backflow Prevention Device
Hose bib	Vacuum breaker
Fire sprinkler system; Solar house using potable water as heat source	Double check valve assembly on water only line. Approved reduced pressure principal backflow assembly on branch lines carrying chemicals.
Photographic processors and developers	Reduced pressure principal backflow assembly
Hot water boilers	Reduced pressure principal backflow assembly
Water hauler tank filling station	Air gap

Additional Drinking Water Concerns:

All sources of drinking water are subject to potential contamination by constituents that are naturally occurring or man made. Those constituents can be microbes, organic or inorganic chemicals, or radioactive materials. 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 the 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 at 1-800-426-4791.

EPA has established a drinking water standard for arsenic of 10 ppb. Arsenic is a naturally occurring mineral known to cause cancer in humans at high concentrations. Arsenic levels above 25 ppb warrant public concern.

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, and detected nitrate levels are above 5 ppm, you should ask advice from your health care provider.

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested. Flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline at 1-800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general public. 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 of 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 microbiological contaminants are available from the Safe drinking Water Hotline above.

Please call our Water Foreman, Don Marymee, at (970) 842-5001 if you have any questions.