P.O. Box 5021, 59403-5021



22 March 2012

Dear Consecutive System,

The reauthorization of the Safe Drinking Water Act in 1996 required the Environmental Protection Agency to adopt a rule requiring all community public water systems to provide their customers with an annual report as to the quality of their drinking water. In answer to this requirement the EPA then published the Consumer Confidence Report Rule (CCR Rule) in August of 1998. The deadline for this year's CCR is July 1, 2012 for calendar year 2011 data.

Part of the CCR Rule requires community water systems that sell water to another community water system to provide pertinent water quality data to the purchaser by April 1^{st} so that the purchaser can prepare a report for their customers.

The purpose of this letter and attachments is to provide you with data from all the water quality testing done by the City of Great Falls during 2011. This letter also contains compliance criteria and other important information:

- 1. All of the drinking water supplied to Great Falls, Malmstrom Air Force Base and Black Eagle is treated surface water from the Missouri River. The water treatment facility is located just upstream from the Sun River confluence in Great Falls. A source water delineation and assessment report (for the Missouri River) has been completed by the State of Montana Department of Environmental Quality. Copies of the assessment are available from the DEQ.
- 2. The enclosed printout of the 2011 CCR for Great Falls lists all the contaminants tested for by Great Falls along with the test results. The report is also available on the City of Great Falls web page at http://www.greatfallsmt.net/publicworks/water-quality-consumer-confidence-reports. Both regulated and unregulated contaminants are included in the tables. MCL's and MCLG's are listed only for detected contaminants.

It should be noted that testing frequency varies depending on the type of contaminant. For example, although most of the secondary regulated parameters are tested annually, pH and alkalinity are tested daily and chlorine residual is tested continuously. IOCs, VOCs, and SOCs are tested annually. Finished water turbidity is tested continuously and recorded once every four hours. Coliform bacteria are tested throughout the year on a monthly basis.

Radionuclides are tested once every three to nine years. In 2011, trihalomethanes and haloacetic acids were tested in four samples per quarter during each of the four quarters to determine compliance with Stage 1 of the Disinfectants and Disinfection Byproducts (DBP) Rule. In November 2012, this monitoring will increase to eight samples per quarter. Lead and copper are tested in 30 high-risk samples collected during the summer months every three years and were last tested during 2010. Asbestos is tested in one sample every nine-year compliance cycle. All data presented in the tables are from the most recent testing done in accordance with the applicable regulations.

- 3. The Great Falls public water supply system had no violations of National Primary Drinking Water Regulations (NPDWR) during the reporting period.
- 4. The Great Falls public water supply system was not operating under the terms of any variance or exemption during the reporting period.
- **5.** Great Falls performed monthly sampling for *Cryptosporidium* and *E. coli* in our source water during 2007. A test for radon-222 was performed in January 1995 as indicated in the tables.
- 6. Great Falls performed quarterly sampling for List 1 UCMR2* contaminants during 2008. *part 2 of the Unregulated Contaminant Monitoring Rule
- 7. The name of the Great Falls water system is "City of Great Falls Public Water Supply System". The Public Water Supply ID number is MT0000525. Please let me know if you need additional information or have any questions. I can be reached at 406-727-1325, ext. 13 or by email at tfilliater@greatfallsmt.net.

Sincerely,

Tammy Filliater

Water Quality Specialist

January Filliater

Great Falls Water Treatment Plant

Attachments

Consumer Confidence Report - 2011

City of Great Falls Public Drinking Water Supply

P.O. Box 5021, Great Falls, MT 59403 Phone (406) 727-1325

This report is prepared annually by the City of Great Falls Water Utility. Its purpose is to evoke confidence in the quality of our municipal drinking water. Please take a few minutes to review it and feel free to call us with any questions.

The source of our water

The drinking water used by the residents of Great Falls, Malmstrom Air Force Base and Black Eagle is water that was pumped from the Missouri River and treated to make it safe to drink. The water treatment facility is located just upstream from the Missouri's confluence with the Sun River in Great Falls.

Water treatment and purification

Great Falls utilizes a conventional water treatment process, producing on average 4.5 billion gallons of safe drinking water per year. The process is monitored continuously and samples of treated water are collected and analyzed. Only after careful scrutiny is water allowed to flow through underground water mains to reservoirs for use in homes and businesses.

City water personnel stay abreast of new Federal and State drinking water regulations as they are written so that treatment and/or monitoring changes can be implemented as needed in a timely and cost-effective manner. The City is committed to the goal of providing its citizens with a safe and dependable supply of drinking water. This goal was achieved during 2011 by operating without any violations, exemptions or variances regarding water quality.

Are there contaminants in our source water?

Water that precipitates from the atmosphere flows across the surface of the land or percolates through the soil. Naturally occurring minerals dissolve and waste substances produced by plants, animals and humans are picked up. The water then either becomes groundwater or makes its way to a stream, river, pond, lake or reservoir. This accumulated water can then be used as a drinking water source.

Contaminants that may need to be removed from a source water before it can be considered safe to drink include:

- microbial contaminants, including viruses, bacteria and protozoa. These can originate from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- inorganic contaminants, such as salts and metals. These can be naturally occurring or the result of urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- pesticides and herbicides. These may come from a variety of sources including agriculture, urban storm water runoff and residential uses.
- organic chemical contaminants, including synthetic and volatile organic chemicals. These are by-products of industrial processes and petroleum production and can also come from gas stations, urban storm water runoff and septic systems.

• radioactive contaminants. These can be naturally occurring or the result of oil and gas production or mining activities.

Montana's Department of Environmental Quality (DEQ) completed and made available the Great Falls source water delineation and assessment report. This report delineates a source water protection area for Great Falls (an area of surface water and land that contributes water to the Great Falls Public Water Supply). It also identifies locations or regions within this area where contaminants might be generated, stored or transported and addresses their relative potential for contaminating Great Falls drinking water. The report can be used to develop a source water protection plan for Great Falls.

Do I need to take special precautions?

The Environmental Protection Agency diligently establishes regulations setting allowable limits for contaminants in drinking water delivered by public water systems. The Food and Drug Administration regulates contaminants in bottled water, affording equivalent protection to public health. Any drinking water may be reasonably expected to contain allowable amounts of some contaminants. It's important to remember that the presence of these contaminants does not necessarily mean the water will pose a health risk. Detailed information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791) or our local City-County Health Department (454-6950).

Certain people may be more vulnerable to contaminants in drinking water than the general population. For example, immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons having HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections caused by certain microbiological contaminants. These people should seek advice about their 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 (1-800-426-4791).

How can I become involved?

You can learn more about your local water utility by attending any of the regularly scheduled City Commission meetings on the first and third Tuesdays of every month at 7:00 p.m. in the Commission Chambers at the Great Falls Civic Center. You may also arrange a tour of the local water treatment plant by calling 727-1325. Regulatory updates and other interesting information can be found by visiting the American Water Works Association web site at http://www.awwa.org.

Questions & Answers

Q: How often is our drinking water tested?

A: The type and frequency of testing required is based on the water's source and the number of people served. Great Falls is classified as a medium-sized (between 50,000 and 100,000 served) surface water (Missouri River) community public water supply. As such, Great Falls is required to monitor the levels of some drinking water constituents, such as disinfectant residual, continuously while other constituents, such as radionuclides, are required to be tested only once every several years. The data presented in the tables contained in this report are the results from the most recent testing done in accordance with the applicable regulations.

Q: Why does the water coming out of my tap look milky sometimes but then clear up in my glass after a few seconds?

A: The water coming into your home may contain harmless dissolved gases (air) held in solution by the pressure of the water system. As the water leaves the tap the pressure rapidly decreases causing millions of tiny air bubbles to be suspended in the water, producing the milky appearance. The water then clears from the bottom of the container as the air bubbles rise and return to the atmosphere.

Q: How hard is Great Falls water?

A: Great Falls water is classified as moderately hard, ranging from 127 to 167 milligrams per liter (7.4 to 9.8 grains per gallon) as calcium carbonate. Some households install water softeners as a matter of personal preference but softening is generally not necessary.

Some Facts About Water

Of the 326 million cubic miles of water on earth, 97% is seawater. Of the remaining 3%, 77% is frozen and 22% is underground. This leaves each person on our planet enough liquid fresh surface water to fill a cube 130 feet on a side. But the water is not evenly distributed and is in constant demand.

One gallon of water weighs about 81/3 pounds.

Average total water use (both indoor and outdoor) for a typical single-family home is about 125 gallons per person per day.

You can fill an 8-ounce glass with drinking water 15,000 times for the same cost as a six-pack of soda.

You can survive about a month without food, but only 5 to 7 days without water.

Water Analysis Data

The data tables on the next several pages contain terms and abbreviations with which you may be unfamiliar. In order to help you better understand this data we offer the following definitions and explanations:

parts per million (ppm) or milligrams per liter (mg/l) - one part per million is equivalent to one minute in two years or one penny in \$10,000.

parts per billion (ppb) or micrograms per liter ($\mu g/l$) - one part per billion is equivalent to one minute in 2,000 years or one penny in \$10,000,000.

picocuries per liter (pCi/l) - a measure of radioactivity in water.

millirems per year (mrem/yr) - a measure of radiation exposure. In the United States, the average person is exposed to an effective dose equivalent of approximately 360 mrem (whole body exposure) per year from all sources.

Nephelometric Turbidity Unit (NTU) - a measure of the clarity of water. Water having turbidity in excess of 5 NTU would appear noticeably cloudy to the average person.

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.

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 Residual Disinfection Level Goal or MRDLG - the level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Maximum Residual Disinfection Level or MRDL - the highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

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 required process intended to reduce the level of a contaminant in drinking water.

The City of Great Falls routinely monitors for contaminants in drinking water according to Federal and State laws. The four data tables included in this report document the test results from monitoring during the period January 1st through December 31st, 2011. The State of Montana requires monitoring for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Therefore some of the following data, though representative, are more than one year old. The tables are arranged as follows:

Table I. Regulated Contaminants Detected

Table II. Unregulated Contaminants Detected

Table III. Regulated Contaminants Not Detected

Table IV. Unregulated Contaminants Not Detected

Additional copies of this report are available free of charge from the Great Falls Water Treatment Plant. Furthermore, an electronic copy can be found at www.greatfallsmt.net/publicworks/water-quality-report. If you have any questions about this report or your water utility contact Tammy Filliater at (406) 727-1325.

	Table I. Remi	lated Conf	aminante	Detecto				
Table I. Regulated Contaminants Detected Contaminant Likely Source of Contamination Unit of MCL MCLG Date Level Viola								
			MICEO	Sampled	Detected	Violatio (yes/no		
Arsenic	erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes	0	1/24/11	2	no			
Fluoride	erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories	4	4	1/24/11	0.6 (all of it naturally- occurring)	no		
Nitrate plus Nitrite (as Nitrogen)	runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	ppm	10	10	1/24/11	0.22	no	
Lead Note: In a sample collected 2/22/10, no lead was detected in the treated water as it left the water treatment plant.	corrosion of household plumbing systems; erosion of natural deposits	ppb	AL = 15 90 th percentile level must be less than 15	15	30 tests from high- risk* homes during July, August and September, 2010	(see below) one site was ≥	no	
Copper Note: In a sample collected 2/22/10, no copper was detected in the treated water as it left the water treatment plant.	corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	ppm	AL = 1.3 90 th percentile level must be less than 1.3	1.3	30 tests from high- risk* homes during July, August and September, 2010	0.38 @ 90 th percentile (see below) one site exceeded 1.3 ppm	no	
LEAD AND COPPER RULE SAMPLING SUMMARY (triennial samples)					Lead	Copper	·	
Note: Each sample collected for lead separately numbered 1-30 base	ort the sites are	Site Ranking	Range high to low	Range high to low				
the highest level of lead did no	t necessarily also have the highest i	opper, inai is, in evel of conner	e sue naving	1.	. 37	2.75		
				2	14			
•						0.89		
		00th perce	antila lavals . S	3	7	0.52		
		90 th perce	entile levels →	4	<u>7</u> 5	0.52 0.38		
* The 1994 Federal Lead & Co	pper Rule mandates a household to	esting program f	or these		7	0.52 0.38 0.37		
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Contaminant (Table I. continued)	Likely Source of	of Contamination	Unit of Measurement	MCL	MCLG	Date Sampled	Level Detected	Violation (yes/no)
(Table I. continued) Turbidity	soil runoff		NTU	TT = 1 NTU	0	throughout	0.19	no
Turbluity	30H TullOH		""	maximum	v	the year,	maximum	
Turbidity is a measure of the					every four		for 2011	
cloudiness of the water. It is						hours	on 3/22/11	
monitored because it is a good			NTU	TT < 0.3 NTU	0	throughout		no
indicator of the effectiveness				95% of the		the year,	100% of	
of the water filtration system.				time		every four hours	the time	
Radionuclides			<u> </u>			HOUIS		<u> </u>
Beta particles/photon emitters	decay of natura	al and man-made	mrem/yr	4	0	2/23/99	2.7 (± 2.7)	no
Deta particles/proton enitters	deposits	in died main made	l mioni yi				pCi/l gross beta	
Gross Alpha	erosion of natu	ral deposits	pCi/l	15	0	7/28/08	3.8	no.
Radium 226 + Radium 228	erosion of natu		pCi/l	5	0	7/28/08	0.1	no
Disinfectants								
Chlorine		used to control	ppm	MRDL=4	MRDLG=4	continuously	0.06 to 1.94	no
Chloramines [†]	microbes water additive	used to control	ppm	MRDL=4	MRDLG=4	continuously	0.06 to 1.94	no
1	microbes		7 1 1 1 1 1 1	. *			ad in at h afama	the restan
The primary disinfectant us exits the treatment plant. Mono	ed in Great Falls ochloramine does	s is tree chlorine. T	nrough the addi- eadily as free chl	uon or ammonia, lorine and thus he	monocniora dos in mainta	mme is forme aining disinfe	cu just before ection at the f	me water ar edges of
the distribution system. Compa	red to free chlor	ine, monochloram	ine is a weak ox	idizer and so min	imizes disinf	ection by-pro	oduct formation	on. Total
chlorine levels were checked at	t the treatment p	lant and throughou	t the distribution	ı system on a dail	y basis durir	ig 2011 and a	it no time exc	eeded the
MRDL or the MRDLG. Levels	ranged from a l	ow of 0.06 ppm in	the distribution	system to a high	of 1.94 ppm	in water leav	ing the treatn	ent plant.
Microbiological Contan								
Total Coliform	naturally prese	nt in the	% positive	5%	0	throughout	1.4% in	no
	environment		samples per	per month		the year,	November; 0% all	
			month	1		70/month		
	<u>L </u>		<u></u>				months	1 1 1
Synthetic Organic Cont				·y				
Hexachlorocyclopentadiene	discharge from	chemical	ppb	50	50	5/24/11,	0.19	no
	factories					8/08/11,	maximum	
그 얼마 나가 뭐 낡아야?						11/07/11	for 2011 on 8/08/11	niger sit
Disinfection By-Product	e (I)PDe)		<u> </u>				OR 6/06/11	l
TTHMs	by-product of	drinking water	ppb	80	N/A	quarterly	see table	no
(total trihalomethanes)	disinfection	irinking water	PPC	run. ann. avg.‡		4	below	
HAA5s	by-product of	drinking water	ppb	60	N/A	quarterly	see table	no
(five haloacetic acids)	disinfection			run. ann. avg. [‡]		1	below	
TTHM Summary	2 nd quarter	3 rd quarter	4 th quarter	1 st quarter	2 nd quart	er 3 rd q	uarter 4	th quarter
sampling period \rightarrow	2010	2010	2010	2011	2011		11	2011
samping period —							4.2	36.7
		52.6		34.6	47.6	1 84	4.Z I	
site # 1	41.4	52.6 52.5	47.1	34.6 40.5	47.6 55.1			
site # 1 site # 2	41.4 49.4	52.5	47.1 52.1	40.5	55.1	9:	2.4	40.1
site # 1 site # 2 site # 3	41.4 49.4 40.5	52.5 52.5	47.1 52.1 42.9	40.5 32.8	55.1 48.6	99	2.4	40.1 35.4
site # 1 site # 2 site # 3 site # 4	41.4 49.4 40.5 55.2	52.5 52.5 55.6	47.1 52.1 42.9 54.1	40.5 32.8 38.7	55.1 48.6 48.1	92 83 9	2.4 3.9 1.7	40.1 35.4 47.8
site # 1 site # 2 site # 3 site # 4 quarterly average	41.4 49.4 40.5 55.2 46.6	52.5 52.5 55.6 53.3	47.1 52.1 42.9 54.1 49.1	40.5 32.8 38.7 36.7	55.1 48.6 48.1 49.9	99 8. 9	2.4 3.9 1.7 8.1	40.1 35.4 47.8 40.0
site # 1 site # 2 site # 3 site # 4	41.4 49.4 40.5 55.2	52.5 52.5 55.6 53.3 44.4	47.1 52.1 42.9 54.1 49.1 46.2	40.5 32.8 38.7 36.7 46.4	55.1 48.6 48.1 49.9 47.3	9: 8: 9 8: 5:	2.4 3.9 1.7 8.1 6.0	40.1 35.4 47.8
site # 1 site # 2 site # 3 site # 4 quarterly average †running annual average	41.4 49.4 40.5 55.2 46.6 46.4	52.5 52.5 55.6 53.3 44.4 highes	47.1 52.1 42.9 54.1 49.1 46.2 t compliance lev	40.5 32.8 38.7 36.7 46.4 rel for 2011 = 56.	55.1 48.6 48.1 49.9 47.3	99 8. 9 8. 50 range = 44.4	2.4 3.9 1.7 8.1 6.0 to 56.0	40.1 35.4 47.8 40.0 53.7
site # 1 site # 2 site # 3 site # 4 quarterly average †running annual average	41.4 49.4 40.5 55.2 46.6 46.4 containing trihal	52.5 52.5 55.6 53.3 44.4 highes	47.1 52.1 42.9 54.1 49.1 46.2 t compliance lev	40.5 32.8 38.7 36.7 46.4 rel for 2011 = 56.	55.1 48.6 48.1 49.9 47.3	99 8. 9 8. 50 range = 44.4	2.4 3.9 1.7 8.1 6.0 to 56.0	40.1 35.4 47.8 40.0 53.7
site # 1 site # 2 site # 3 site # 4 quarterly average †running annual average Some people who drink water or central nervous systems, and	41.4 49.4 40.5 55.2 46.6 46.4 containing trihal	52.5 52.5 55.6 53.3 44.4 highestomethanes in exce creased risk of get	47.1 52.1 42.9 54.1 49.1 46.2 t compliance levess of the MCL oting cancer.	40.5 32.8 38.7 36.7 46.4 rel for 2011 = 56. ver many years n	55.1 48.6 48.1 49.9 47.3	99 88 9 85 range = 44.4 ce problems v	2.4 3.9 1.7 8.1 6.0 to 56.0 with their live	40.1 35.4 47.8 40.0 53.7 r, kidneys,
site # 1 site # 2 site # 3 site # 4 quarterly average †running annual average Some people who drink water or central nervous systems, and #AA5 Summary	41.4 49.4 40.5 55.2 46.6 46.4 containing trihald may have an in 2 nd quarter	52.5 52.5 55.6 53.3 44.4 highes omethanes in exce creased risk of get	47.1 52.1 42.9 54.1 49.1 46.2 t compliance leves of the MCL of the the theorem of	40.5 32.8 38.7 36.7 46.4 rel for 2011 = 56.6 ver many years n	55.1 48.6 48.1 49.9 47.3 0 nay experience	99 88 9 85 range = 44.4 ce problems v	2.4 3.9 1.7 8.1 6.0 to 56.0 with their live	40.1 35.4 47.8 40.0 53.7 r, kidneys,
site # 1 site # 2 site # 3 site # 4 quarterly average †running annual average Some people who drink water or central nervous systems, and HAA5 Summary sampling period →	41.4 49.4 40.5 55.2 46.6 46.4 containing trihal I may have an in 2 nd quarter 2010	52.5 52.5 55.6 53.3 44.4 highestomethanes in excecreased risk of get 3rd quarter 2010	47.1 52.1 42.9 54.1 49.1 46.2 t compliance lev ss of the MCL o ting cancer. 4 th quarter 2010	40.5 32.8 38.7 36.7 46.4 rel for 2011 = 56. ver many years n 1st quarter 2011	55.1 48.6 48.1 49.9 47.3 0 nay experience 2 nd quart 2011	99 88 9 88 50 range = 44.4 ce problems v	2.4 3.9 1.7 8.1 6.0 to 56.0 with their live	40.1 35.4 47.8 40.0 53.7 x, kidneys,
site # 1 site # 2 site # 3 site # 4 quarterly average †running annual average Some people who drink water or central nervous systems, and HAA5 Summary sampling period → site # 1	41.4 49.4 40.5 55.2 46.6 46.4 containing trihal I may have an in 2 nd quarter 2010 40.1	52.5 52.5 55.6 53.3 44.4 highes omethanes in exce creased risk of get 3 rd quarter 2010 62.1	47.1 52.1 42.9 54.1 49.1 46.2 t compliance leves of the MCL of ting cancer. 4th quarter 2010 52.2	40.5 32.8 38.7 36.7 46.4 rel for 2011 = 56. ver many years not see the s	55.1 48.6 48.1 49.9 47.3 0 nay experience 2 nd quart 2011 59.4	99 88 9 88 50 range = 44.4 ce problems ver 3 rd q 20	2.4 3.9 1.7 8.1 6.0 to 56.0 with their live	40.1 35.4 47.8 40.0 53.7 rr, kidneys, th quarter 2011 47.0
site # 1 site # 2 site # 3 site # 4 quarterly average [‡] running annual average Some people who drink water or central nervous systems, and #AA5 Summary sampling period → site # 1 site # 2	41.4 49.4 40.5 55.2 46.6 46.4 containing trihal I may have an in 2 nd quarter 2010 40.1 45.5	52.5 52.5 55.6 53.3 44.4 highestomethanes in excecreased risk of get 3 rd quarter 2010 62.1 43.2	47.1 52.1 42.9 54.1 49.1 46.2 t compliance leves of the MCL of ting cancer. 4th quarter 2010 52.2 23.0	40.5 32.8 38.7 36.7 46.4 rel for 2011 = 56. ver many years not see the s	55.1 48.6 48.1 49.9 47.3 0 nay experience 2 nd quart 2011 59.4 6.5	99 88 9 85 range = 44.4 ce problems ver 3 rd q 20 89	2.4 3.9 1.7 8.1 6.0 to 56.0 with their live	40.1 35.4 47.8 40.0 53.7 T, kidneys, th quarter 2011 47.0 27.3
site # 1 site # 2 site # 3 site # 4 quarterly average †running annual average Some people who drink water or central nervous systems, and ### HAA5 Summary sampling period → site # 1 site # 2 site # 3	41.4 49.4 40.5 55.2 46.6 46.4 containing trihald may have an in 2 nd quarter 2010 40.1 45.5 43.4	52.5 52.5 55.6 53.3 44.4 highestomethanes in excecerased risk of get 3rd quarter 2010 62.1 43.2 60.7	47.1 52.1 42.9 54.1 49.1 46.2 t compliance leves of the MCL of ting cancer. 4 th quarter 2010 52.2 23.0 51.4	40.5 32.8 38.7 36.7 46.4 rel for 2011 = 56.4 ver many years in 1st quarter 2011 44.3 38.9 41.9	55.1 48.6 48.1 49.9 47.3 0 nay experience 2 nd quart 2011 59.4 6.5 35.9	99 88 99 87 87 87 88 89 89 89 89 80 80 80 80 80 80 80 80 80 80 80 80 80	2.4 3.9 1.7 8.1 6.0 to 56.0 with their live uarter 2.11 9.0 2.9 4.0	40.1 35.4 47.8 40.0 53.7 r, kidneys, th quarter 2011 47.0 27.3 45.7
site # 1 site # 2 site # 3 site # 4 quarterly average trunning annual average Some people who drink water or central nervous systems, and HAA5 Summary sampling period site # 1 site # 2 site # 3 site # 4	41.4 49.4 40.5 55.2 46.6 46.4 containing trihal l may have an in 2 nd quarter 2010 40.1 45.5 43.4 62.7	52.5 52.5 55.6 53.3 44.4 highestomethanes in excecreased risk of get 3 rd quarter 2010 62.1 43.2 60.7 48.4	47.1 52.1 42.9 54.1 49.1 46.2 t compliance leves of the MCL of ting cancer. 4th quarter 2010 52.2 23.0 51.4 36.4	40.5 32.8 38.7 36.7 46.4 rel for 2011 = 56.4 ver many years n 1st quarter 2011 44.3 38.9 41.9 40.1	55.1 48.6 48.1 49.9 47.3 0 nay experience 2 nd quart 2011 59.4 6.5 35.9 58.3	99 88 98 50 range = 44.4 ce problems v er 3 rd q 20 89 33 88	2.4 3.9 1.7 8.1 6.0 to 56.0 with their live uarter 11 9.0 2.9 4.0 7.0	40.1 35.4 47.8 40.0 53.7 T, kidneys, Th quarter 2011 47.0 27.3 45.7 43.2
site # 1 site # 2 site # 3 site # 4 quarterly average †running annual average Some people who drink water or central nervous systems, and ### HAA5 Summary sampling period → site # 1 site # 2 site # 3	41.4 49.4 40.5 55.2 46.6 46.4 containing trihald may have an in 2 nd quarter 2010 40.1 45.5 43.4 62.7 47.9	52.5 52.5 55.6 53.3 44.4 highestomethanes in excecereased risk of get 3 rd quarter 2010 62.1 43.2 60.7 48.4 53.6	47.1 52.1 42.9 54.1 49.1 46.2 t compliance leves of the MCL of ting cancer. 4th quarter 2010 52.2 23.0 51.4 36.4 40.8	40.5 32.8 38.7 36.7 46.4 rel for 2011 = 56.6 ver many years n 1 st quarter 2011 44.3 38.9 41.9 40.1 41.3	55.1 48.6 48.1 49.9 47.3 0 nay experience 2 nd quarte 2011 59.4 6.5 35.9 58.3 40.0	99 88 99 88 50 range = 44.4 ce problems v er 3 rd q 20 89 33 88	2.4 3.9 1.7 8.1 6.0 to 56.0 with their live uarter 2 11 9.0 2.9 4.0 7.0 3.2	40.1 35.4 47.8 40.0 53.7 Tr, kidneys, th quarter 2011 47.0 27.3 45.7 43.2 40.8
site # 1 site # 2 site # 3 site # 4 quarterly average †running annual average Some people who drink water or central nervous systems, and ### HAA5 Summary sampling period site # 1 site # 2 site # 3 site # 4	41.4 49.4 40.5 55.2 46.6 46.4 containing trihal l may have an in 2 nd quarter 2010 40.1 45.5 43.4 62.7	52.5 52.5 55.6 53.3 44.4 highestomethanes in excecereased risk of geter 2010 62.1 43.2 60.7 48.4 53.6 42.9	47.1 52.1 42.9 54.1 49.1 46.2 t compliance leves so of the MCL of ting cancer. 4th quarter 2010 52.2 23.0 51.4 36.4 40.8 44.1	40.5 32.8 38.7 36.7 46.4 rel for 2011 = 56.4 ver many years n 1st quarter 2011 44.3 38.9 41.9 40.1	55.1 48.6 48.1 49.9 47.3 0 nay experience 2 nd quarte 2011 59.4 6.5 35.9 58.3 40.0 43.9	99 88 99 88 50 range = 44.4 ce problems v er 3 rd q 20 89 33 88	2.4 3.9 1.7 8.1 6.0 to 56.0 with their live uarter 4 111 9.0 2.9 4.0 7.0 3.2 8.8	40.1 35.4 47.8 40.0 53.7 T, kidneys, Th quarter 2011 47.0 27.3 45.7 43.2

Regulated Contaminants (Table I. continued)

Total Organic Carbon (TOC) provides a medium for the formation of disinfection by-products, which include TTHMs and HAA5s. Removing TOC at the water treatment plant is important in reducing the potential for the formation of all disinfection by-products, both regulated and unregulated.

Data Campulad	Date Sampled River Water TOC Treated Water TOC % Remova		In the second se	1				
	*****	Treated Water TOC	% Removal Required (A)	% Removal Achieved (B)	Compliance Ratio (B/A)*			
1/24/11	3.0 ppm	2.2 ppm	15.0	26.7	1.78			
2/07/11	2.6 ppm	2.0 ppm	15.0	23.1	1.54			
3/17/11	3.5 ppm	2.6 ppm	15.0	25.7	1.71			
4/18/11	2.8 ppm	2.3 ppm	15.0	17.9	1.19			
5/17/11	3.2 ppm	2.5 ppm	15.0	21.9	1.46			
6/02/11	3.5 ppm	2.4 ppm	15.0	31.4	2.10			
7/07/11	4.4 ppm	3.0 ppm	25.0	31.8	1.27			
8/03/11	4.7 ppm	3.1 ppm	35.0	34.0	0.97			
9/01/11	4.2 ppm	2.8 ppm	35:0	33.3	0.95			
10/06/11	4.0 ppm	2.5 ppm	25.0	37.5	1.50			
11/01/11	3.9 ppm	2.7 ppm	15.0	30.8	2.05			
12/05/11	3.3 ppm	2.4 ppm	15.0	27.3	1.82			

*Compliance is based, in part, upon the yearly average compliance ratio being equal to or greater than 1.0. In 2011, the average compliance ratio was 1.53.

Secondary Parameter	Date Sampled	Lêvel Detected	Unit of Measurement	SMCL**
Calcium	1/24/11	37	ppm	N/A
Magnesium	1/24/11	12	ppm	N/A
Sodium	1/24/11	16	ppm	< 20 recommended
Total Hardness	1/24/11	141	ppm	N/A
Total Alkalinity	1/24/11	111	ppm	N/A
Conductivity	1/24/11	357	micromhos/cm	N/A
pH	1/24/11	7.2	pH units	6.5 - 8.5
Langelier Index	1/24/11	-0.6	N/A	N/A
** Secondary Marinum Co.	Anna I COLOTA 2		A 7'.	

** Secondary Maximum Contaminant Level (SMCL) - a chemical contaminant in excess of this amount may affect aesthetic qualities and public acceptance. SMCLs are non-enforceable standards.

Table II. Unregulated Contaminants Detected

Unregulated contaminant monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.

Radon-222 1/09/95 47 (± 37) pG// see comments below	Radionuclid	Date Sampled Level Detected	Unit of Measurement	Significance
	Radon-222	1/09/95 47 (± 37)	pCi/l	see comments below

About radon: There is currently no federal regulation for radon in drinking water. Radon is a radioactive gas that you can't see, taste or smell. It is found all over the U.S. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water that contains radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Fix your home if the level of radon in your air is 4 picocuries per liter of air (4pCi/l) or higher. There are simple ways to fix a radon problem that aren't too costly. For additional information, call your state radon program or call EPA's Radon Hotline (1-800-SOS-RADON).

Inorganic Contaminants	Date Sampled	Level Detected	Unit of Measurement	We will be a series of the ser
Bicarbonate	1/24/11	136	ppm	No. 10 Control of the
Chloride	1/24/11	11	ppm	250
Potassium	1/24/11	4	ppm	N/A
Silica	1/24/11	19.8	ppm	N/A
Strontium	1/24/11	200	ppb	N/A
Sulfate	1/24/11	50	ppm	250

The following three disinfection by-products are volatile organics that are not regulated individually but are included in total trihalomethanes:

Contaminant	Date Sampled	Level Detected	Unit of Measurement
Bromodichloromethane	5/24/11	7.3	ppb
Chlorodibromomethane	5/24/11	0.88	ppb
Chloroform	5/24/11	33	ppb

Table III. Regulated Contaminants Not Detected

Radionuclides - tested 7/28/08

Note: testing for uranium was not required because the result for gross alpha did not exceed the MCL of 15 pCi/l (see Table 1)

Microbiological Contaminants - tested throughout 2011, 70 routine distribution system samples per month

Escherichia coli

Regulated Contaminants (Table III.	Continued)	•				
Inorganic Contaminants – all teste	d 1/24/11 un	less otherwise indicated				
Antimony Cadmium		Iron		Nickel		
Asbestos (5/24/11) Chromium			Lead		Selenium	
Barium Copper		Manganese		Thallium		
Beryllium Cyanide		Mercury				
Volatile Organic Contaminants (V	OCs) = all t	ested 5/24/11 unless other	rwise indicated			
Benzene 1,1-Dichloroethene			Styrene		Toluene	
Carbon tetrachloride cis-1,2-Dichloroethene		Tetrachloroethene		Vinyl chloride		
Chlorobenzene trans-1,2-Dichloroethene		1,2,4-Trichlorobenzene		Xylenes (ortho-, meta-, para-)		
1,2-Dichlorobenzene Methylene chloride		1,1,1-Trichloroethane		1,2-Dibromo-3-chloropropane		
1,4-Dichlorobenzene 1,2-Dichloropropane		ropropane	1,1,2-Trichloroethane		Total BTEX	
1,2-Dichloroethane Ethylbenzene		ene	Trichloroethene			
Synthetic Organic Contaminants (SOCs) – all tested 5/24/11, 8/08/11, a		ınd 11/07/11 unless other	wise indicate	The second secon		
2,4,-D (5/24/11, 8/08/11) Dibromochloropropane		(statewide waiver)	Hexachloro	benzene		
		Dinoseb (5/24/11, 8/08/	8/11) Lind		Lindane (gamma-BHC)	
Alachlor Diquat (statewide waive		er) Methox		thoxychlor		
Atrazine Dioxin (2,3,7,8-TCDD)		(statewide waiver)	Oxamyl (Vydate) (5/26/11, 8/08/11)			
Benzo(a)pyrene (PAH) Endothall (statewid		Endothall (statewide wa	iver)	Polychlorinated biphenyls (PCB's) (8/08/05)		
Carbofuran (5/26/11, 8/08/11) Endrin		Endrin		Pentachlorophenol (5/24/11, 8/08/11)		
Chlordane Ethylene dibromide (Ethylene dibromide (EL	OB) (statewide waiver)	Picloram (Tordon) (5/24/11, 8/08/11)		
Dalapon (5/24/11, 8/08/11)	•	Glyphosate (statewide v			ine	
Di(2-ethylhexyl)adipate		Heptachlor		Toxaphene		
Di(2-ethylhexyl)phthalate	144 4 21	Heptachlor epoxide				

	Table IV. Unr	egulated (Contamir	ants Not Detec	ted	
Unregulated contaminant me	onitoring helps EPA to determ	ine where certai	in contaminani	s occur and whether it i	needs to	regulate those contaminants.
Inorganic Contaminants –	all tested 1/24/11 unless other	wise indicated	The William Advisory of the Committee of	\$\tau_{1}\$ \tau_{1}\$ \tau_	V 1000 V 100	The second of th
Aluminum	Carbonate	Molybdenum		Silver		Zinc
Volatile Organic Contamin	ants (VOCs) – all tested 5/24	/11 unless other	wise indicated	The boster of a property of the control of the cont	Andrew Control of the	A set of property of the first and the control of t
Bromobenzene	1,3-Dichlorobenzene		1,2,3-Trichle	ropropane	n-Proj	oylbenzene
Bromoform	1,1-Dichloroethane Bromochloromethane		sec-B	utylbenzene		
Bromomethane	1,3-Dichloropropane		n-Butylbenze	me	tert-B	utylbenzene
1,2-Dibromoethane	2,2-Dichloropropane		Dichlorodifh	ioromethane	1,2,3-	Trichlorobenzene
Chloroethane	1,1-Dichloropropene	re, fu	Trichlorofluc	oromethane	1,2,4-	Trimethylbenzene
Chloromethane	nloromethane cis-1,3-Dichloropropene Hexachlorobutadiene		1,3,5-	Trimethylbenzene		
2-Chlorotoluene	trans-1,3-Dichloropr	opene	Isopropylbenzene		Methyl tert-Butyl Ether (MTBE)	
4-Chlorotoluene	1,1,1,2-Tetrachloroe	1,1,1,2-Tetrachloroethane p-Isopropyltoluene				
Dibromomethane 1,1,2,2-Tetrachloroethane		hane	Naphthalene			
Synthetic Organic Contam	inants (SOCs) — all tested 5/2	4/11, 8/08/11, a	nd 11/07/11 ur	iless otherwise indicated		** U.
Aldrin	3-Hydroxycarbofuran (5/26/11, 8/08/11)	Aldicarb (Te	mik) (5/26/11, 8/08/11)	Dichle	orprop (5/24/11, 8/08/11)
Butachlor	Methomyl (5/26/11,	8/08/11)	Aldicarb Sul	fone (5/26/11, 8/08/11)	Methi	ocarb (5/26/11, 8/08/11)
Carbaryl (5/26/11, 8/08/11)	Metolachlor		Aldicarb Sul	foxide (5/26/11, 8/08/11)		
Dicamba (5/24/11, 8/08/11)	Metribuzin		Acifluorfen (8/08/05)		
Dieldrin Propachlor 2,4-DB (5/24/11, 8/08/11)						
Unregulated Contaminant	Monitoring Rule 1 (UCMR)) Contaminant	s - all tested l	0/23/01, 1/02/02, 4/08/0	2 and 7	/01/02
Perchlorate MTBE 2,4-Din		2,4-Dinitrotoluene		EPTC		
DCPA mono-acid	Nitrobenzene 2		2,6-Dinitrotoluene		Molinate	
DCPA di-acid Acetochlor			4-4'-DDE		Terbacil	
Unregulated Contaminant	Monitoring Rule 2 (UCMR2) Contaminant	s - all tested 3.	/10/08, 6/30/08, 9/15/08	and 12	/15/08
Dimethoate	2,2',4,4',5,5'-HBB	BDE-99		BDE-153		2,4,6-Trinitrotoluene (TNT)
Terbufos Sulfone	BDE-47	BDE-100		1,3-Dinitrobenzene		RDX

In Summary, analysis of Great Falls drinking water revealed no violations during 2011. Although some constituents were detected, the Environmental Protection Agency considers water to be safe at these levels. Furthermore, MCLs are set very stringently. To put this into perspective, for a given regulated contaminant a person would have to drink 2 liters of water every day at the MCL level for a lifetime for there to be a one-in-a-million chance of having a corresponding adverse health effect.