

## 2011 Annual Consumer Report on the Quality of Tap Water, Grand Forks AFB, North Dakota

This is an annual report on the quality of water delivered by Grand Forks AFB (GFAFB), North Dakota. Under the "Consumer Confidence Reporting Rule" of the federal Safe Drinking Water Act (SDWA), community water systems are required to report this water quality information to the consuming public. Presented in this report is information on the source of our water, its constituents and the health risks associated with any contaminants.

The 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, 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 water 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, urban storm water runoff, and residential uses. (D) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water 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, the Environmental Protection Agency (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. 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 at (1-800-426-4791).

We continually monitor the drinking water for contaminants. Our water is safe to drink; however, 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 microbial contaminants are available from the Safe Drinking Water Hotline at (1-800-426-4791).

All non-emergency-use water used by GFAFB is purchased from the City of Grand Forks. The

319th Civil Engineer Squadron maintains the water distribution system on GFAFB and will notify the supplier if daily checks indicate additional chlorination is needed. The City of Grand Forks obtains their water from the Red River and the Red Lake River. The Red River and the Red Lake River are surface water sources. For the purposes of this report, the City of Grand Forks' Department of Drinking Water is designated as a "supplier" when referring to water sources. To review Source Water Assessments or Wellhead Protection Plans contact the appropriate supplier.

### Monitoring of Your Drinking Water

The suppliers monitor the drinking water used at GFAFB for radiological, disinfectant byproducts (total trihalomethanes and total haloacetic acids) and chemical quality, as directed by the North Dakota Department of Health (NDDH). Bioenvironmental Engineering Flight personnel draw water from the distribution system and residential taps to test for lead, copper, pH, chlorine, fluoride and bacteriological quality. All water samples are sent to an accredited laboratory and tested using EPA approved

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laboratory methods. The NDDH dictates all sampling schedules for drinking water testing. Our water system is monitored for the contaminant groups listed in Column 1 (Table 1) using EPA-approved methods. Column 2 specifies the monitoring frequency.

## Analyte Groups and Monitoring Frequency Table (see page 3)

### Definitions of Key Terms

To gain a better understanding of the content of this report, several key terms and acronyms must be defined. They are as follows:

Maximum Contaminant Level Goal (MCLG) - 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 (MCL) - 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 (MRDLG) - The level of

disinfection below which there are 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 (MRDL) - The highest level of disinfection allowed. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

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

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

parts per million (ppm) - A unit measure equivalent to one cent in \$10,000.

parts per billion (ppb) - A unit measure equivalent to one cent in \$10,000,000.

CCR - Consumer Confidence Report.

SDWA, Safe Drinking Water Act - Federal law that set drinking water regulations.

pCi/L, picocuries per liter - A measure of radioactivity in water

NTU, nephelometric turbidity unit - A measure of turbidity in water.

TTHMs, Total trihalomethanes - By-products of drinking water disinfection.

HAAs, HaloAcetic Acids - By-products of drinking water disinfection.

Highest Level Found - Laboratory analytical result for a contaminant; the highest level of that contaminant found; this value is evaluated against an MCL or AL to determine compliance.

Range - The range of the highest and lowest analytical values of a reported contaminant. For example, the range of reported analytical detection for an unregulated contaminant may be 10.1 ppm (lowest value) to 13.4 ppm (highest value). EPA requires this range be reported.

**Detected Contaminants**  
**See Tables 2 and 3**  
Our system is constantly monitored for various contaminants in the water supply to meet all regulatory requirements. The table lists only those contaminants that had some level of detection.

Many other contaminants have also been analyzed but were not present or were below the detection limits of the lab equipment.

The NDDH requires that certain contaminants be monitored less than once per year because the concentrations of these contaminants are not expected to vary from year to year. Some data, while representative, may be more than 1 year old. EPA requires different reporting methodologies for different contaminants. A brief explanation of our reporting methodologies for each detected contaminant is provided below:

**Lead** - If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. City of Grand Forks is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. Use water from the cold tap for drinking and cooking. When your water has been sitting for several hours, you can minimize

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the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

Copper - EPA requires us to report the 90th percentile value for the most current round of sampling and the total number of sampling sites exceeding the action level. The City of Grand

Forks' Dept of Drinking Water and GFAFB had no sampling sites exceed the action level resulting in 100% compliance.

### *Unregulated Contaminates*

Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

### *Information on Cryptosporidium*

Cryptosporidium is a microscopic parasite that is found in domestic and wild animals. When

ingested, it can cause fever and many gastrointestinal symptoms. Grand Forks source water has been monitored monthly for this organism in 2007 and 2008. No cryptosporidium was found in our source water during 2007. In 2008, the organism was detected in one of twelve samples. Monitoring was accomplished and results provided to NDDH for the selection of future treatment technologies.

### *Public Involvement/Good Faith Postings*

GFAFB would appreciate it if large volume water customers post copies of the CCR in conspicuous locations or distribute them to tenants, residents, patients, students, and/or

employees, so individuals who consume the water, but do not receive a water bill can learn about our water system. For your convenience a copy of this CCR is on file at the GFAFB Library and also available on the GFAFB public internet website, <http://www.grandforks.af.mil>. The suppliers' drinking water monitoring information was obtained from the City of Grand Forks. Additionally, if you are aware of non-English speaking individuals who need help with language translation please call Public Affairs. Any questions concerning the information contained in this report should be directed to Public Affairs at 747-7072.

Table 1 - Analyte Groups and Monitoring Frequency Table

Analyte/Contaminant Group	Monitoring Frequency
Radioactivity	Reduced monitoring, every 6 years due before the end of 2013
Lead and Copper	Reduced monitoring, every 3 years, due in 2014
Trihalomethanes & Haloacetic Acids	Quarterly
Bacteriological	Monthly
Inorganic Contaminants	Sliding 5 Year window Barium, Chromium, Selenium, Fluoride reduced monitoring, every 9 years, due before the end of 2013
Volatile Organic Compounds	Every 3 Years

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Table 2 - City of Grand Forks Department of Water

Contaminant	Date <sup>+</sup>	MCLG	MCL	Highest Level Found	Range of Detection	Exceeded Standard	Likely Source of Contamination
<b>Inorganic Substances</b>							
Arsenic	2007	0 ppb	10 ppb	1.17 ppb	N/A	No	Erosion of Natural Deposit
Barium	2010	2	2	0.0126 ppm	N/A	No	Erosion of Natural Deposit
Fluoride	2010	4	4	1.11 ppm	N/A	No	Natural Deposits/Fertilizer Use/Water Additives
Nitrate-Nitrite	2011	10 ppm	10 ppm	1.64 ppm	N/A	No	Natural Deposits/Fertilizer Use/Septic Systems
<b>Disinfection Byproducts</b>							
HaloAcetic Acids (HAA5)	2011	N/A	60 ppb	20 ppb	3.42 – 42.03 ppb	No	Disinfection Byproduct
Total Trihalomethanes (TTHM)	2011	N/A	80 ppb	31 ppb	12.88 – 51.51 ppb	No	Disinfection Byproduct
<b>Total Organic Carbon Removal</b>							
Alkalinity, Source	2011	N/A	N/A	252 MG/L	170.00-252.00 ppm	No	Naturally Present in the Environment
Carbon, Total Organic (TOC) - Finished	2011	N/A	N/A	7.9 MG/L	4.65 – 7.90 ppm	No	Naturally Present in the Environment
Carbon, Total Organic (TOC) – Source	2010	N/A	N/A	17.00 MG/L	11.70 – 17.00 ppm	No	Naturally Present in the Environment
<b>Disinfectants</b>							
Chloramines	2011	4 (MRDL)	4 (MRDL)	2.6 ppm	2.5 – 2.7 ppm	No	Water Additive
<b>Lead and Copper</b>							
Lead	2011	N/A	15 ppb (AL)	4.4 ppb (90 <sup>th</sup> %)	N/A	1 sample exceeded AL	Plumbing Corrosion
Copper	2011	N/A	1.3 ppm (AL)	0.1 ppm (90 <sup>th</sup> %)	N/A	No	Plumbing Corrosion
<b>Microbiological Substances</b>							
Turbidity <sup>**</sup>	2011	N/A	TT	0.21 NTU	N/A	No	Soil Runoff
Total Coliform Bacteria, Fecal Coliform, and E.coli	2011	0	<5% monthly samples	0 positive samples	N/A	No	Naturally Present in the Environment

<sup>+</sup> The state requires us to monitor for certain contaminants less than one year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of our data, though representative, is more than 1 year old.

<sup>\*\*</sup> The turbidity result is the highest single measurement. Monitoring for the state requirement is based on the lowest monthly percentage of samples meeting the limit of 0.5 NTU. Our lowest monthly percentage meeting the limit was 100%. Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indication of the effectiveness of our filtration system. Turbidity has no health effects; however it can interfere with disinfection and provide a medium for microbial growth.

Table 3 - Grand Forks AFB

Contaminant	Date	MCLG	MCL	Highest Level Found	Range of Detection	Exceeded Standard	Likely Source of Contamination
Lead	2011	N/A	15 ppb (AL)	6.18 (90 <sup>th</sup> %)	N/A	1 samples exceeded AL	Plumbing Corrosion
Copper	2011	N/A	1.3 ppm (AL)	0.162 ppm (90 <sup>th</sup> %)	N/A	No	Plumbing Corrosion
Total Coliforms	2011	0 positive samples	0 positive samples	0 samples positive	N/A	No	Naturally Present in the Environment
Fecal Coliforms	2011	0 positive samples	0 positive samples	0 sample positive	N/A	No	Naturally Present in the Environment