

# MINOT AIR FORCE BASE

## 2014

# WATER QUALITY REPORT

### System ID 5100710

#### Terms for this Report

**AL (Action Level):** The concentration of a contaminant, if exceeded, triggers treatment or other requirements which a water system must follow.

**MCL (Maximum Contaminant Level):** The highest level of a contaminant that is allowed in drinking water.

**MCLG (Maximum Contaminant Level Goal):** The level of a contaminant in drinking water below which there is no known or expected risk to health.

**mg/L (milligram per liter):** Or part per million, the parts of contaminant per million parts of water. Roughly equivalent to one drop per 10 gallons of water.

**MRDL (Maximum Residual Disinfection Level):** The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**MRDLG (Maximum Residual Disinfectant Level Goal):** 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.

**ND (Not Detected):** Or below the detectable level of the test procedure.

**NTU (Nephelometric Turbidity Units):** A measure of how clean the water is, caused by suspended matter in the water.

**pCi/l (picocuries per liter):** A measure of radioactivity

**ppm (parts per million):** Or milligrams per liter, roughly equal to one drop per ten gallons of water or one minute in two years.

**ppb (parts per billion):** Or micrograms per liter, roughly equal to one drop in ten thousand gallons of water or one minute in two thousand years.

**ppt (parts per trillion):** Or nanograms per liter, roughly equal to one drop in ten million gallons of water.

**ppq (parts per quadrillion):** Or picograms per liter, roughly equal to one drop in ten billion gallons of water, or a four-year water supply for Minot.

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

The City of Minot was selected by the EPA to sample for 21 unregulated contaminants during 2014. Samples were taken four times from both the Entry point to the distribution (Water Treatment Plant) and the Maximum Residence Time sampling point.

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.

The following unregulated contaminants (Table 2) were the only contaminants detected during this sampling. Results are from Entry Point to the Distribution and Maximum Residence Time in the Distribution.

**Table 1. Detected Regulated Contaminants**

Contaminant	MCLG	MCL	Level or Range	Date Tested	Source of Contaminant
<b>INORGANIC CONTAMINANTS</b>					
Arsenic (ppb)	0	10	3.41	5/10	Erosion of natural products; runoff from orchards; runoff from glass and electronics production wastes
Barium (ppm)	2	2	0.00795	6/10	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chromium (ppb)	100	100	2.1	6/10	Discharge from steel and pulp mills; Erosion of natural deposits
Fluoride (ppm)	4	4	0.71	12/14	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate + Nitrite (ppm)	10	10	0.15	4/14	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium	50	50	4.54	6/10	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
<b>DISINFECTION BYPRODUCTS</b>					
Total Haloacetic Acids (ppb)	0	60	19	09/14	Byproduct of drinking water chlorination *Compliance based on annual average
Total Trihalomethanes (ppb)	0	80	58	09/14	Byproduct of drinking water chlorination *Compliance based on annual average
<b>DISINFECTANTS</b>					
Chloramine residual (ppm)	MRDLG 4	MRDL 4.0	0.87 to 2.34	1/14-12/14	Water additive used to control microbes
<b>OTHER CONTAMINANTS</b>					
Copper (ppm)	1.3	AL=1.3	0.0292*	8/12	Corrosion of household plumbing systems; erosions of natural deposits; leaching from wood preservatives
Lead (ppb)	0	AL=15	ND*	8/12	Corrosion of household plumbing systems
Total Coliforms	0	5% of monthly samples	0	1/14-12/14	Naturally present in the environment
<b>RADIOACTIVE CONTAMINANTS</b>					
Gross Alpha (pCi/l) Inc RA Exc RN&U	15	15	1.52	11/09	Erosion of natural products
Radium, combined (226,228) (pCi/l)	0	5	0.00919	11/09	Erosion of natural products
Uranium, combined (ppb)	0	30	0.722	11/09	Erosion of natural products

\*This value represents the 90<sup>th</sup> percentile value of the most recent round of sampling.

**Table 2. Detected Unregulated Contaminants**

Unregulated Contaminant	Minimum Reporting Level (ug/L)	Average Value at Entry Point to the Distribution System (ug/L)	Range of Detection at Entry Point to Distribution System (ug/L)	Average Value at Maximum Residence Time in the Distribution System (ug/L)	Range of Detection at Maximum Residence Time in to Distribution System (ug/L)
Chromium	0.20	1.48	1.40 to 1.70	1.48	1.20 to 1.80
Molybdenum	1.00	6.60	6.10 to 7.00	6.80	6.20 to 8.10
Strontium	0.30	154.43	105.40 to 188.70	144.75	111.00 to 168.30
Vanadium	0.20	3.33	2.60 to 4.00	3.58	2.80 to 4.10
Chromium (VI)	0.03	1.38	1.27 to 1.56	1.41	1.28 to 1.57

## INTRODUCTION

We're very pleased to provide you with Minot Air Force Base's 2014 Water Quality Report. We want to keep you informed about the excellent water and services you have received over the past year. Our goal is and always has been, to ensure you receive a safe and dependable supply of drinking water. **We are pleased to report that our drinking water is safe and meets all state and federal requirements.**

## WHERE DOES OUR WATER COME FROM?

Minot has two sources of water: the Minot Aquifer and the Sondre Aquifer. The Minot Aquifer follows the Souris River in this vicinity, and the wells are in the valley in the west part of Minot. The Sondre Aquifer comes from the north, travels under Minot, turns and goes southeast to the county line. The wells are about five miles southeast of town where the aquifer passes under the Souris River. The Minot Water Plant is located beside the Souris River at 900 16th Street Southwest.

Minot is currently working on what is called the NAWA or Northwest Area Water Supply project. This will bring Missouri River water from Lake Sakakawea to Minot where it will be treated and sent out to satisfy the water needs of much of northwest North Dakota, including Minot AFB.

## WELLHEAD PROTECTION

The City of Minot participates in North Dakota's Wellhead Protection Program. The City of Minot has completed the delineation and contaminant/land use inventory elements. Based on information from these elements, our source water has been determined to be moderately susceptible to potential contaminants. Copies of the Wellhead Protection plan and other relevant information regarding this program can be obtained from the City of Minot Engineers Office, Public Works during normal office hours.

## THE SAFE DRINKING WATER ACT

The Safe Drinking Water Act (SDWA) was first passed in 1977. It was amended in 1986 and again in 1996. As part of the 1996 amendments all customers must receive a report on the quality of their drinking water. This report covers the calendar year 2014. These results represent the latest tests performed on our water. Also included in the report are pertinent subjects such as water sources, water quality, and a description of terms used.

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 the water poses a health risk. More information about contaminants and potential effects can be obtained by calling EPA's Safe Drinking Water Hotline (800-426-4791).

## ANALYSIS OF MINOT AFB DRINKING WATER

There are 83 substances that are regulated by the EPA, all regulated substances found in our water are well within the established limits and are listed in Table 1. There are a number of components common in all water. Since Minot has 14 different wells, these components can vary, but their averages are listed in Table 2. In addition to the regulated substances Minot also test for turbidity(clarity) and disinfection by-products. Soon to be added are radon, sulfates, and more disinfection by-products.

Federal regulations allow a system to monitor for regulated contaminants less often than once a year. The results listed in Table 1 include the date and results of the most recent samples collected.

## A FEW WORDS ABOUT WATER QUALITY

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:

**Microbial contaminants**, such as viruses and bacteria, which 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 storm run-off, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

**Pesticides and herbicides**, which may come from a variety of sources such as agriculture, storm water runoff, and residential uses.

**Organic chemicals**, 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 run-off and septic systems.

**Radioactive materials**, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Some people may be more vulnerable to contaminants in drinking water than 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/Centers for Disease Control (CDC) and Prevention guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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. Minot AFB 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 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>.

If you have questions regarding this report, please contact Minot AFB Base Utilities Inc. at 727-5050. You may also attend the Minot City Council Public Works Committee meetings if you have concerns about water quality. Meeting times and dates can be obtained by contacting the City Clerk's office at 857-4752. Also, if you are aware of non-English speaking individuals who need help with the appropriate language translation, please call Debbie Chappo at (701) 852-0333.