2010 Drinking Water Quality Report

Here at the Southwest Water Authority we consider ourselves to be a vital and active part of our growing, healthy and prosperous community. We take our responsibility to provide southwest North Dakota with a reliable supply of quality drinking water very seriously. Working with the North Dakota Department of Health and the Environmental Protection Agency, we place drinking water safety at the top of our priorities. Our drive is to achieve a level of excellence that is unsurpassed in our field. To that end we present this, our annual Drinking Water Report. This report will provide information to our customers about the quality of our drinking water. It contains a table of water quality data, definitions of terms, specific language requirements, and other information we hope you will find useful and educational. Please read this report carefully and contact Ken Knight, Water Treatment Plant Operator at 701-225-9149 or Sandy Burwick SWA CFO/ Office Administrator at 1-888-425-0241, or e-mail swa@swwater.com if you have any questions.

Source and Treatment

We get our drinking water from the City of Mandan. The Mandan Water Treatment Plant treats water that is drawn from the Missouri River. This is a surface water source. They then use the following treatment processes before delivering the water to their customers: clarification, softening, filtration, fluoridation, and disinfection. The Missouri West Water System purchases water from the City of Mandan for delivery to their customers. The Southwest Water Authority then purchases water from Missouri West Water System for delivery to you, our valued customers.

Contamination Sources

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 stormwater runoff, 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, urban stormwater runoff, and residential uses.
- *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 stormwater runoff, and septic systems.
- *Radioactive contaminants,* which can be naturally-occurring or be the result of oil and gas production and mining activities.

The North Dakota Department of Health has prepared a Source Water Assessment for the City of Mandan's surface water intake and has classified Mandan's water system as moderately susceptible to potential contaminant sources. It should be noted that historically, the city has effectively treated its source water to meet drinking water standards and the risk for potential contamination is low. Information about the Source Water Assessment is available by calling 701-225-9149 or 1-888-425-0241, or e-mail us at swa@swwater.com.

A new Environmental Protection Agency (EPA) regulation requires sampling source water for certain microbial contaminants to help determine whether or not changes need to be made to the treatment process in the future. There were 6.3 – 137.4 E. Coli/100 ml and only one Cryptosporidium oocyst was detected during 2010.

Drinking Water Safety

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 (800-426-4791). More information about drinking water is available on EPA's website at www.epa.gov/safewater/.

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. 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 and Prevention (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 (800-426-4791).

The EPA requires testing for certain unregulated contaminants, but has not established enforceable drinking water standards for them. They are monitored to determine whether or not future regulation is warranted. To obtain information about these tests please call 701-667-3275.

Detected Contaminants

EPA requires us to monitor for over 90 drinking water contaminants and those that were detected are listed in the following table. Test results are from 2010.

Definitions and abbreviations:

- **Action Level or AL:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **Maximum Contaminant Level or 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 Contaminant Level Goal or 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 Residual Disinfectant 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.
- **Maximum Residual Disinfectant 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.
- **Micromhos per centimeter or umho/cm:** a measure of conductivity.
- **Obsvns:** Observations/field at 100 power.
- **Parts per billion or ppb:** 1 ppb is equivalent to adding 1 pound of a contaminant to 999,999,999 pounds of water (about 120,000,000 gallons).
- **Parts per million or ppm:** 1 ppm is equivalent to adding 1 pound of a contaminant to 999,999 pounds of water (about 120,000 gallons).
- **Treatment Technique or TT:** A required process intended to reduce the level of a contaminant in drinking water.
- **N/A:** Not Applicable
- **NTU:** Nephelometric Turbidity Units

CITY OF MANDAN'S TABLE OF DETECTED REGULATED CONTAMINANTS							
Contaminant (units)	**MCLG**	**MCL**	**Level Detected**	**Detection Range**	**Test Date**	**Exceedance or Violation?**	**Major Sources in Drinking Water**
Total Organic Carbon (TOC) Removal							
Alkalinity (ppm) Source Water	N/A	TT	156	130-156	2010	N/A	Natural erosion, plant activities, and certain industrial waste discharges
Total Organic Carbon (ppm) Source Water	N/A	TT	4.6	2.9-4.6	2010	N/A	Naturally present in the environment
Total Organic Carbon (ppm) Finished Water	N/A	TT	2.1	1.7-2.1	2010	N/A	Naturally present in the environment
Microbial Contaminants							
Turbidity[1] (NTU)	N/A	TT = .3	0.13	N/A	2010	100% of samples met turbidity limit	Soil runoff
Inorganic Contaminants							
Barium (ppm)	2	2	0.0163	N/A	2010	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride (ppm)	4	4	1.17	N/A	2010	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate-Nitrite (ppm)	10	10	0.22	N/A	2010	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Disinfectants							
Chloramines (ppm)	MRDLG = 4	MRDL = 4.0	2.2	2.1-2.3	2010	No	Water additive used to control microbes
Unregulated Contaminants[2]							
Alkalinity, Carbonate (ppm)	N/A	N/A	15	N/A	2010	N/A	Natural erosion, plant activities, and certain industrial waste discharges
Bicarbonate as HCO_3 (ppm)	N/A	N/A	56	N/A	2010	N/A	Natural erosion, plant activities, and certain industrial waste discharges
Calcium (ppm)	N/A	N/A	37.5	N/A	2010	N/A	N/A
Chloride (ppm)	N/A	N/A	11.5	N/A	2010	N/A	N/A
Conductivity @25C (umhos/cm)	N/A	N/A	520	N/A	2010	N/A	N/A
Hardness, Total as $CaCO_3$ (ppm)	N/A	N/A	136	N/A	2010	N/A	N/A
Magnesium (ppm)	N/A	N/A	10.2	N/A	2010	N/A	N/A
Nickel (ppm)	N/A	N/A	0.00109	N/A	2010	N/A	N/A
pH (pH)	N/A	N/A	9.26	N/A	2010	N/A	N/A
Potassium (ppm)	N/A	N/A	4.3	N/A	2010	N/A	N/A
Sodium (ppm)	N/A	N/A	60.7	N/A	2010	N/A	N/A
Sodium Adsorption Ratio (obsvns)	N/A	N/A	2.27	N/A	2010	N/A	N/A
Sulfate (ppm)	N/A	N/A	151	N/A	2010	N/A	N/A
Total Dissolved Solids (TDS) (ppm)	N/A	N/A	323	N/A	2010	N/A	N/A
Zinc (ppm)	N/A	N/A	0.00159	N/A	2010	N/A	N/A

SWA TABLE OF DETECTED REGULATED CONTAMINANTS							
Contaminant (units)	**MCLG**	**MCL**	**Level Detected**	**Detection Range**	**Test Date**	**Exceedance or Violation?**	**Major Sources in Drinking Water**
Inorganic Contaminants							
Copper (ppm)	1.3	AL = 1.3	0.109	N/A	2010	No sites exceeded the Action Level	Corrosion of household plumbing systems; Erosion of natural deposits
Lead[3] (ppb)	0	AL = 15	1	N/A	2010	No sites exceeded the Action Level	Corrosion of household plumbing systems; Erosion of natural deposits

[1] Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of our filtration system.

[2] The EPA requires testing for certain unregulated contaminants, but has not established enforceable drinking water standards for them. They are monitored to determine whether or not future regulation is warranted. To obtain information about these tests you may contact Ken Knight, Water Treatment Plant Operator or Sandy Burwick SWA CFO/ Office Administrator at 1-888-425-0241 or e-mail us at swa@swwater.com.

[3] 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. Southwest Water Authority 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.

So the bottom line is this.

As you can see from the table, there were no exceedances or violations. We are pleased to report that our water system was also in compliance with all other drinking water regulations in 2010. The Southwest Water Authority encourages you to participate in decisions that may affect our water by attending any of our regularly scheduled meetings, which are held on the first Monday of each month. If you are interested in attending or would like to request agenda time, please contact us at 1-888-425-0241 for information on time and location. The City of Mandan, as our water supplier, also conducts regular meetings that may pertain to our water. If you are interested in attending any of their meetings, please call 701-667-3275 for more information. Missouri West Water System also holds regular meetings that may relate to our water. If you wish to attend any of their meetings, please call 701-663-8549 for more information. Please contact us if you are aware of non-English speaking individuals who need assistance with the appropriate language translation. In order to allow individuals who consume our drinking water, but who do not receive water bills, to learn about our water system, we would appreciate it if our large volume water customers would post copies of this report in conspicuous locations or distribute them to tenants, residents, patients, students, and/or employees.