

## **Annual Drinking Water Quality Report Oakes, North Dakota 2009**

We're very pleased to provide you with this year's *Annual Drinking Water Quality Report*. We want to keep you informed about the excellent water and services we have delivered to you over the past year. Our goal is to provide you with a safe and dependable supply of drinking water. Our water source is ground water drawn by three wells from the Oakes Aquifer.

The city of Oakes is participating in North Dakota's Wellhead Protection Program. A copy of this program is available upon request. The North Dakota Department of Health has prepared a Source Water Assessment for Oakes. Information regarding this program is also available upon request.

Our public water system, in cooperation with the North Dakota Department of Health, has completed the delineation and contaminant/land use inventory elements of the North Dakota Source Water Protection Program. Based on the information from these elements, the North Dakota Department of Health has determined that our source water is "moderately susceptible" to potential contaminants. No significant sources of contamination have been identified.

If you have any questions about this report or concerning your water utility, please contact Pat Nelson, Maintenance Supervisor, at 701-742-2910, Ralph Packulak, Water Plant Operator, at 701-742-4492, or April Haring, City Auditor, at 701-742-2137. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the first Monday of every month at 6:00 PM at City Hall, 115 South 5<sup>th</sup> St. If you are aware of non-English speaking individuals who need help with the appropriate language translation, please call April at the number listed above.

The city of Oakes would appreciate it if large volume water customers would please post copies of the *Annual Drinking Water Quality Report* 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.

The city of Oakes routinely monitors for contaminants in your drinking water according to Federal and State laws. The following table shows the results of our monitoring for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2009. As authorized and approved by EPA, the state has reduced monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of our data [e.g., for inorganic contaminants], though representative, is more than one year old.

The sources of drinking water (both tap 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 water 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 storm water 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 storm water runoff, and septic systems.

*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. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide 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:

*Not Applicable (NA), No Detect (ND)*

*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 (µg/l)*- one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

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

*Micromhos per centimeter (µmho/cm)* – micromhos per centimeter is a measure of conductivity in water.

*Observations (obsvns)* – observations/field at 100 Power.

*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* - 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 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 Residual Disinfectant Level (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 (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.

**TEST RESULTS FOR THE CITY OF OAKES**

<u>Contaminant</u>	<u>MCLG</u>	<u>MCL</u>	<u>Level Detected</u>	<u>Units</u>	<u>Range</u>	<u>Date (year)</u>	<u>Violation Yes/No</u> <u>Other Info</u>	<u>Likely Source of Contamination</u>
<b>Organic Carbon Removal</b>								
Alkalinity, Total	NA		112	Ppm	NA	2009	No	
<b>Inorganic Contaminants</b>								
Arsenic	NA	10	2.23	ppb	NA	2008	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronic production wastes
Barium	2	2	0.0249	ppm	NA	2009	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride	4	4	0.085	ppm	NA	2009	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate-Nitrite (as Nitrogen)	10	10	0.74	ppm	NA	2009	No	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits

Selenium	50	50	3.29	ppb	NA	2006	No	Discharge from petroleum metal refineries; erosion natural deposits; discharge from mines
Copper	1.3	AL=1.3	0.704 90 <sup>th</sup> % Value	ppm	NA	2009	0 Sites exceeded AL	Corrosion of household plumbing systems; erosion natural deposits; leaching of wood preservatives
Lead	0	AL=15	4.16 90 <sup>th</sup> % Value	ppb	NA	2009	0 Sites exceeded AL	Corrosion of household plumbing systems, erosion natural deposits

### Disinfection Byproducts

HAA5		60	1	ppb	NA	2009	No	By-product of drinking water disinfection
TTHM (Total Trihalomethanes)		80	5	ppb	NA	2009	No	By-product of drinking water chlorination

### Disinfectants

Chlorine	MRDL=4	MRDL=4.0	1.1	ppm	0.5 – 1.5	2009	No	Water additive used to control microbes
----------	--------	----------	-----	-----	-----------	------	----	---

### Microbiological Contaminants

Total Coliform Bacteria	0	1 per month for systems less than 40,000 population	0	NA	NA	2009	No	Naturally present in the environment
-------------------------	---	---	---	----	----	------	----	--------------------------------------

### Unregulated Contaminants

Bicarbonate as HCO3			137	ppm	NA	2009	No	
Calcium			36	ppm	NA	2009	No	
Chloride			12.5	ppm	NA	2009	No	
Conductivity @ 25 C UMHOS/CM			335	umho/cm	NA	2009	No	
Hardness, Total (As CAC03)			132	ppm	NA	2009	No	
Iron			0.054	ppm	NA	2008	No	
Magnesium			10.1	ppm	NA	2009	No	
Manganese			0.771	ppm	NA	2008	No	
Nickel			0.00933	ppm	NA	2006	No	
PH			6.71	PH	NA	2009	No	
Potassium			2.5	ppm	NA	2009	No	
Silver			0.061	ppm	NA	2006	No	
Sodium			17.2	ppm	NA	2009	No	
Sodium Adsorption Ratio			0.65	obsvns	NA	2009	No	
Sulfate			32	ppm	NA	2009	No	
TDS			180	ppm	NA	2009	No	
Zinc			0.021	ppm	NA	2009	No	

### IDSE

HAA5-IDSE	NO	29.51	ppb	1.28 - 29.51	2009	No
TTHM-IDSE	NO	42.84	ppb	6.25 - 42.84	2009	No

EPA requires monitoring of over 80 drinking water contaminants. Those contaminants listed in the table above are the only contaminants detected in your drinking water.

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

Due to questions regarding vegetation growth in and around the city of Oakes during the 2008 growing season, additional sampling have been done for water quality. The results, as shown in the table below, indicated trace amounts of the herbicide picloram in the water. According to the Safe Drinking Water Act (SDWA), the Maximum Contaminant Level is the highest level of a contaminant that is allowed in drinking water. The Maximum Contaminant Level for Picloram is 500 ppb.

#### **Monitoring Results for Picloram Investigation**

<u>Sampling Date</u>	<u>Sample Site</u>	<u>Type of Water</u>	<u>Result</u>	<u>Units</u>
04/07/2009	Fire Hall Well	Raw	ND	ppb
	Historic Well	Raw	1.59	ppb
	WTP Well	Finished	ND	ppb
	Bernie Vculek	Finished	ND	ppb
07/22/2009	WTP Well	Raw	8.50	ppb
08/26/2009	WTP Well	Raw	6.35	ppb
09/23/2009	WTP Well	Raw	2.60	ppb
	Fire Hall Well	Raw	ND	ppb
	Historic Well	Raw	ND	ppb
11/04/2009	WTP Well	Raw	1.08	ppb
12/14/2009	WTP Well	Raw	1.39	ppb

This herbicide will continuously be monitored even though it is well below the EPA standard for safe drinking.

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 Oakes 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 second 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>.

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 (1-800-426-4791).

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

**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 microbiological contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).**



Please call our office if you have any questions.

The average household uses approximately 350 gallons of water per day. There are many low-cost ways to conserve water. Water your lawn at the least sunny times of the day. Fix toilet and faucet leaks. Take short showers – a 5 minute shower uses 4-5 gallons of water compared to up to 50 gallons for a bath. Turn the faucet off while brushing your teeth and shaving; 3-5 gallons go down the drain per minute. Teach your kids about water conservation to ensure that future generations use water wisely.

The city of Oakes works diligently to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.

*The City of Oakes is an Equal Opportunity Employer and Provider*