

# 2011 Annual Water Quality Report

For January 1 to December 31, 2011



City of Gering, 1025 P Street, P.O. Box 687, Gering, NE 69341 (308) 436-6800

Este informe contiene información muy importante sobre el agua que usted bebe. Tradúzcalo ó hable con alguien que lo entienda bien.

## Why This Report

This report is intended to provide you with important information about your drinking water and the efforts made by the City of Gering water system to provide safe drinking water.

Our goal is and always has been to provide to you a safe and dependable supply of drinking water. For more information regarding this report, contact Pat Heath, Director of Public Works at 436-6800.

If you would like to observe or participate in the decision-making process that affects your drinking water quality, please attend the regularly scheduled meetings of the Gering City Council, on the 2nd and 4th Monday of each month at 7:00 PM, Gering City Hall, 1025 P Street.

## Sources of Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and groundwater wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and radioactive material and can pick up substances resulting from the presence of animals or human activity.

### Contaminants that may be present in source water include:

- A. Microbial contaminants, such as viruses and bacteria, which may come from wastewater 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 run-off, 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 run-off and residential uses.

## Contaminants Found in Drinking Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants in drinking water does not necessarily indicate that water poses a health risk.

For more information about contaminants and potential health effects, check out EPA's website at [www.epa.gov/safewater/dwhealth.html](http://www.epa.gov/safewater/dwhealth.html) or call the U.S. Environmental Protection Agency Safe Drinking Water Hotline at (800) 426-4791.

## Source Water Assessment Availability

The Nebraska Department of Environmental Quality, (NDEQ) has completed a source water assessment. Included in the assessment is a Wellhead Protection Area Map, potential contaminant source inventory, vulnerability rating and source water protection information. To view the Source Water Assessment or for more information please contact Pat Heath at 436-6800 or the NDEQ at (402) 471-6988.

- D. 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.
- E. Radioactive contaminants, which can be naturally occurring or the result of oil production and mining activities.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency and the Nebraska Department of Health and Human Services prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

## Notice to immuno-compromised

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. Environmental Protection Agency and Center for Disease Control guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the **Safe Drinking Water Hotline, (800) 426-4791, or the Nebraska Department of Health and Human Services Regulation and Licensure at (402) 471-2541.**

## Gering's Water Source

The City of Gering serves approximately 8,000 customers an average of 2.3 million gallons of water per day. Our water source is groundwater, which is pumped to the water system from five well fields located in Gering and four wells west of Scottsbluff.

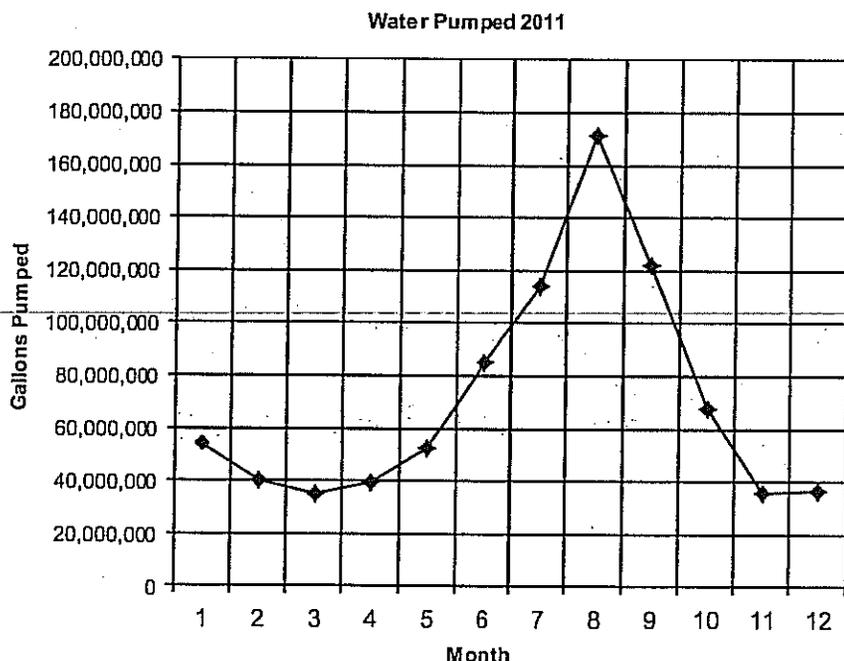
The Midtown and Gueck Well Fields pump water from the North Platte River alluvium, (alluvium is a sand and gravel formation under the North Platte River Valley).

## Treatment Process

The City of Gering does not treat our drinking water supply. Thanks to the natural filtration of the aquifer, nature has already done the work enhancing the quality of Gering's water. However, fluoride is added to the water supply. Fluoride is a natural occurring element in groundwater. Gering's natural fluoride level is 0.33 ppm. The optimum level for fluoride in drinking water to promote strong teeth is 1.0 ppm. The City of Gering adjusts the fluoride level to 1.0 ppm. The fluoride ion added to the water is the same fluoride ion that occurs naturally in groundwater.

## Water Use Information

During 2011, the City of Gering pumped 855 million gallons of water. With a population of 8,500 this averages to 276 gallons per person each day. The national average is 150 gallons per person each day. The chart below shows water pumped each month during 2011.



## Peak Electrical Use

To conserve on electrical usage during summer peak hours, the City of Gering shuts off some of the water production wells and uses more water from the storage tanks. This practice helps the City stay within the allotted hourly electrical use and will help keep the cost the City pays for electricity down. All of our customers should reduce their water and electrical use during the hours of 1:00 PM to 7:00 PM when summer temperatures are above 85 degrees. This will help keep the electrical rates the City charges our customers as low as possible.

## Lead in Drinking Water

Infants and young Children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested. Flushing your tap for 30 seconds to 2 minutes before using your tap water will clear the line of any lead that may have leached into the water while the line was idle.

Additional information is available from the Safe Drinking Water Hotline (800) 426-4791 or the department of Health and Humans Services/Division of Public Health/Office of Drinking Water (402) 471-2541.

### *The City of Gering is required to test for the following contaminants:*

Coliform Bacteria, Antimony, Arsenic, Asbestos, Barium, Beryllium, Cadmium, Chromium, Copper, Cyanide, Fluoride, Lead, Mercury, Nickel, Nitrate, Nitrite, Selenium, Sodium, Thallium, Alachlor, Atrazine, Benzo(a)pyrene, Carbofuran, Chlordane, Dalapon, Di(2-ethylhexyl)adipate, Dibromochloropropane, Dinoseb, Di(2-ethylhexyl) phthalate, Diquat, 2,4-D, Endothall, Endrin, Ethylene dibromide, Glyphosate, Heptachlor, Heptachlor epoxide, Hexachlorobenzene, Hexachloro-cyclopentadiene, Lindane, Methoxychlor, Oxamyl (Vydate), Pentachlorophenol, Picloram, PCB'S (Polychlorinated biphenyls), Simazine, Toxaphene, Dioxin, Silvex, Benzene, Carbon Tetrachloride, o-Dichlorobenzene, Para-Dichlorobenzene, 1,2-Dichloroethane, 1,1-Dichloroethylene, Cis-1,2,-Dichloroethylene, Trans-1,2-Dichloroethylene, Dichloromethane, 1,2-Dichloropropane, Ethylbenzene, Monochlorobenzene, 1,2,4-Trichlorobenzene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethylene, Vinyl Chloride, Styrene, Tetrachloroethylene, Toluene, Xylenes (total), Gross Alpha (minus Uranium & Radium 226), Radium 226 plus Radium 228, Sulfate, Chloroform, Bromodichloromethane, Chlorodromomethane, Bromoform, Chlorobezene, m-Dichlorobenzene, 1,1-Dichloropropene, 1,1-Dichloroethane, 1,1,2,2-Tetrachlorethane, 1,2-Dichloropropane, Chloromethane, Bromomethane, 1,2,3-Trichloropropane, 1,1,1,2-Tetrachloroethane, Chloroethane, 2,2-Dichloropropane, o-Chlorotoluene, p-Chlorotoluene, Bromobenzene, 1,3-Dichloropropene, Aldrin, Butachlor, Carbarryl, Dicamba, Dieldrin, 3-Hydroxy-carbofuran, Methonyl, Metolachlor, Metribuzin, Propachlor, Uranium and if disinfecting test for Disinfection By Products

**How to read this report**

**Maximum Contaminant Level (MCL)** Highest level of a contaminant allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

**Maximum Contaminant Level Goal (MCLG)** Level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

**PPM** (parts per million) or (micrograms per liter) - 1 part per million corresponds to 1 minute in 2 years or one penny in 10 thousand dollars.

**PPB** (parts per billion) or (ug/l, micrograms per liter) - 1 part per billion corresponds to 1 minute in 200 years or one penny in 10 million dollars.

**PPT** (parts per trillion) or (nanograms/L, nanograms per liter) - 1 part per trillion corresponds to one minute in 2,000,000 years or one penny in ten trillion dollars.

**pCi/L** (Pico Curie per liter) is a measurement of radioactivity.

**N/A** Not Applicable.

**Note:** The state requires monitoring of certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Therefore, some of this data may be more than one year old.

**a.** Action Level is the concentration of a contaminant which, if exceeded triggers treatment or another requirement which a water system must follow.

**b.** Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

**c.** Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with the circulatory system, and may have an increased risk of getting cancer.

**d.** Alpha Emitters results include radon and uranium, with radon and uranium subtracted from the result the City is in compliance with the Radioactive MCL.

**e.** Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.

**Drinking Water Analysis (Collected In 2010 Unless Noted)**

**Regulated Samples Collected From Source Water**

| Regulated Contaminants       | Highest Level Detected | Range of Levels Detected | Unit of Measurements | MCLG | MCL | Violation | Likely Source of Contamination  |
|------------------------------|------------------------|--------------------------|----------------------|------|-----|-----------|---|
| Arsenic <sup>a</sup>         | 18.6                   | 4.74 - 18.6              | ppb                  | 0    | 10  | Yes       | Erosion of natural deposits, run-off from orchards and run-off from electronics production wastes                         |
| Barium 7/21/2008             | 0.0736                 | 0.0736 - 0.0756          | ppm                  | 2    | 2   | No        | Discharge of drilling wastes, discharge from metal refineries and erosion of natural deposits                             |
| Chromium 7/21/2008           | 7.51                   | 7.51 - 7.51              | ppb                  | 100  | 100 | No        | Discharge from steel and pulp mills and erosion of natural deposits   |
| Fluoride                     | 1.09                   | 0.73 - 1.09              | ppm                  | 4    | 4   | No        | Water additive which promotes strong teeth, erosion of natural deposits, discharge from fertilizer and aluminum factories |
| Nitrate-Nitrite <sup>d</sup> | 6.05                   | 2.44 - 6.05              | ppm                  | 10   | 10  | No        | Run-off from fertilizer use, leaching from septic tanks, sewage and erosion of natural deposits                           |
| Selenium 7/21/2008           | 5.35                   | 5.35 - 5.35              | ppb                  | 50   | 50  | No        | Erosion of natural deposits, discharge from mines, discharge from petroleum and metal refineries                          |
| Uranium Mass <sup>e</sup>    | 38.9                   | 25.5 - 38.9              | ug/l                 | 0    | 30  | Yes       | Erosion of natural deposits   |

**Radioactive Contaminants**

|  |      |      |       |   |    |    |                             |
|--|------|------|-------|---|----|----|-----------------------------|
| Combined Iodine ( <sup>226</sup> & <sup>228</sup> ) 12/20/2010   | 0.1  | 0.1  | pCi/L | 0 | 5  | No | Erosion of natural deposits |
| Gross Alpha <sup>d</sup> 8/29/2005 (including radon and uranium) | 14.9 | 14.9 | pCi/L | 0 | 15 | No | Erosion of natural deposits |
| Combined Uranium 12/20/2010                                      | 0.5  | 0.5  | ug/l  | 0 | 20 | No | Erosion of natural deposits |
| Radium-226   | 0.1  | 0.1  | pCi/L | 0 | 5  | No | Erosion of natural deposits |

**Regulated Samples Collected From Water Distribution System**

| Disinfectants, Disinfection By-Products & Microbial | Monitoring Period     | Highest Level Detected | Range of Levels Detected | Unit of Measurements | MCLG | MCL | Violation | Likely Source of Contamination            |
|---|-----------------------|------------------------|--------------------------|----------------------|------|-----|-----------|---|
| Total Haloacetic Acids (HAAs)                       | 7/1/2009 - 6/30/2010  | 5.64                   | 4.5 - 7.34               | ppb                  | 0    | 60  | No        | By-product of drinking water chlorination |
| Total Trihalomethanes (TTHMs)                       | 7/1/2009 - 6/30/2010  | 23.127                 | 20.24 - 26.25            | ppb                  | 0    | 80  | No        | By-product of drinking water chlorination |
| Microbial - Total Coliform and E. Coli              | 1/1/2010 - 12/31/2010 | 0                      | 0                        | Present/Absent       | 0    | 0   | No        | Naturally present in the environment      |

**Lead and Copper - Monitoring Period 2008-2010 - Unit of Measurement: ppb**

| Lead MCLG | Lead Action Level (AL) | Lead 90th Percentile | Lead AL | Copper MCLG | Copper Action Level (AL) | Copper 90th Percentile | Copper AL | # Siles Over Copper AL | Likely sources of Contamination  |
|-----------|------------------------|----------------------|---------|-------------|--------------------------|------------------------|-----------|------------------------|--|
| 0         | 15 <sup>a</sup>        | 4.0                  | 0       | 1.300       | 1.300 <sup>a</sup>       | 3.491                  | 0         | 0                      | Erosion of natural deposits, leaching from wood Preservatives, corrosion of household plumbing systems |

**During the 2010 Calendar Year, the City of Gering had the below noted violations of the drinking water regulations.**

| Type        | Category                            | Analyte          | Compliance Period       |
|-------------|-------------------------------------|------------------|-------------------------|
| MCL Average | Maximum Contaminant Level Violation | ARSENIC          | 04/01/2010 - 06/30/2010 |
| MCL Average | Maximum Contaminant Level Violation | COMBINED URANIUM | 04/01/2010 - 06/30/2010 |
| MCL Average | Maximum Contaminant Level Violation | COMBINED URANIUM | 07/01/2010 - 09/30/2010 |
| MCL Average | Maximum Contaminant Level Violation | ARSENIC          | 07/01/2010 - 09/30/2010 |

**The City of Gering has taken the following actions to return to compliance with the Nebraska Safe Drinking Water Act:**

In 2007 the City located a new drinking water source. Construction of the new wells, transmission pipeline, water storage tanks and pump station was completed and these new water system improvements were placed into service on November 17, 2010. The City is now in compliance with the Nebraska Safe Drinking Water Act standards for Arsenic and Uranium.