

Annual
WATER
QUALITY
REPORT

Reporting Year 2013



Presented By
Grand Island Utilities

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Our Commitment to You

The City of Grand Island is proud to present the Annual Water Quality Report covering all testing performed between January 1 and December 31, 2013. Over the years, Grand Island Utilities has been dedicated to producing drinking water that meets all state and federal standards, and we continually strive to adopt new methods for delivering the best quality drinking water to our customers. As new challenges to drinking water safety emerge, you can be assured that Grand Island Utilities will remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Community Participation

If you would like to observe or participate in the decision-making processes that affect drinking water quality, please attend the regularly scheduled meetings of the City Council at City Hall, 100 East 1st Street.

Where Does My Water Come From?

The source of drinking water used by the City of Grand Island is groundwater from the sand and gravel aquifer that underlies the area. This water is pumped from wells maintained by the City of Grand Island.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control 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 at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.

Lead in Home Plumbing

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. We are responsible for providing high-quality drinking water, but we cannot control the variety of materials used in plumbing components. 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 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 www.epa.gov/safewater/lead.

What's a Cross-Connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems), or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools, or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed all industrial, commercial, and institutional facilities in the service area to make sure that all potential cross-connections are identified and eliminated or protected by a backflow preventer. Inspection and testing of backflow preventers is required to make sure that it is working correctly to provide for maximum protection.

For more information, review the Cross-Connection Control Manual from the U.S. EPA's Web site at <http://water.epa.gov/infrastructure/drinkingwater/pws/crossconnectioncontrol/index.cfm>. You can also call the Safe Drinking Water Hotline at (800) 426-4791.

Water Conservation

You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Timothy Luchsinger, Utilities Director, at (308) 389-0280.

Source Water Assessment

A wellhead protection area assessment has been prepared by the Nebraska Department of Environmental Quality (NDEQ). For more information, please contact the Ground Water Section, NDEQ, at (402) 471-6988.

Regulated and Unregulated Contaminants Tested and Not Detected

Vinyl chloride; 1,2-dichloroethane; chlorobenzene; ortho-dichlorobenzene; ethylbenzene; m,p-xylenes; styrene; bromomethane; chloroethane; tetrachloroethylene; cis-1,2-dichloroethene; ortho-chlorotoluene; para-chlorotoluene; dibromomethane; meta-dichlorobenzene; bromobenzene; bromochloromethane; n-butylbenzene; 1,2,3-trichlorobenzene; tert-butylbenzene; hexachlorobutadiene; isopropylbenzene; para-isopropyltoluene; naphthalene; para-dichlorobenzene; 1,1-trichloroethylene; carbon tetrachloride; dichloromethane; 1,2-dichloropropane; trans-1,2-dichloroethylene; 2,2-dichloropropane; 1,1-dichloropropene; 1,2-dichloropropane; 1,1,2-trichloroethane; 1,1,1,2-tetrachloroethane; 1,1,2,2-tetrachloroethane; 1,2,3-trichloropropane; n-propylbenzene; sec-butylbenzene; dichlorodifluoromethane; fluorotrichloromethane; 1,2,4-trichlorobenzene; 1,2,4-trimethylbenzene; 1,3,5-trimethylbenzene; 1,3-dichloropropene; alachlor; aldrin; benzopyrene; bulachor; butylate; chlordane; chlorpyrifos; cyanazine; dieldrin; dyfonate; gamma-BHC; heptachlor; hexachlorobenzene; hexachlorocyclopentadiene; methoxychlor; metribuzin; propachlor; simazine; trifluralin; aldicarb; aldicarb sulfone; aldicarb sulfoxide; carbaryl; carbofuran; 3-hydroxycarbofuran; methomyl; oxmyl(vydate); ethylene dibromide; dibromochloropropane; PCBs; 2,4-D; 2,4,5-TP; pentachlorophenol; dalapon; dicamba; dinoseb; picloram; acifluorfen; glyphosate; diquat; paraquat; endothall; dioxin; antimony; cadmium; mercury; thallium; beryllium; cyanide; metolochlor; chloromethane; perchlorate; EPTC; 2,6-dinitrotoluene; 2,4-dinitrotoluene; molinate; terbacil; acetochlor; 4,4-DDE; MtBE; nitrobenzene; trichloroethene; toluene; benzene; total DCPA; 1,1-dichloroethylene; 1,1,1-trichloroethane; aldicarb sulfoxide; 1,1-dichloroethane.

Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.

Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water that 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 these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife; **Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may 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 may also come from gas stations, urban stormwater runoff, and septic systems; **Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

What Are PPCPs?

When cleaning out your medicine cabinet, what do you do with your expired pills? Many people flush them down the toilet or toss them into the trash. Although this seems convenient, these actions could threaten our water supply.

Recent studies are generating a growing concern over pharmaceuticals and personal care products (PPCPs) entering water supplies. PPCPs include human and veterinary drugs (prescription or over-the-counter) and consumer products, such as cosmetics, fragrances, lotions, sunscreens, and household cleaning products. From 2006 to 2010, the number of U.S. prescriptions increased 12 percent to a record 3.7 billion, while nonprescription drug purchases held steady around 3.3 billion. Many of these drugs and personal care products do not biodegrade and may persist in the environment for years.

The best and most cost-effective way to ensure safe water at the tap is to keep our source waters clean. Never flush unused medications down the toilet or sink. Instead, check to see if the pharmacy where you made your purchase accepts medications for disposal, or contact your local health department for information on proper disposal methods and drop-off locations. You can also go on the Web at <http://earth911.com/recycling/unwanted-or-expired-medications> to find more information about disposal locations in your area.

Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The tables below show only those contaminants that were detected in the water. The State requires us to monitor for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Arsenic (ppb)	2011	10	0	4.27	<RL-4.27	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Atrazine (ppb)	2013	3	3	0.394	<RL-0.394	No	Runoff from herbicide used on row crops
Barium (ppm)	2011	2	2	0.100	0.100-0.100	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chromium (ppb)	2011	100	100	7.83	7.83-7.83	No	Discharge from steel and pulp mills; Erosion of natural deposits
Combined Radium (pCi/L)	2011	5	0	1.6	0.2-1.6	No	Erosion of natural deposits
Endrin (ppb)	2013	2	2	0.794	<RL-0.794	No	Residue of banned insecticide
Fluoride (ppm)	2011	4	4	0.522	0.522-0.522	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Gross Alpha, excluding Radon & Uranium (pCi/L)	2013	15	0	8.2	3.4-8.2	No	Erosion of natural deposits
Heptachlor Epoxide (ppt)	2013	200	0	200	200-200	No	Breakdown of heptachlor
Nickel (ppb)	2012	100	NA	3.25	1.66-3.25	No	Naturally occurring
Nitrate ¹ (ppm)	2013	10	10	6.3	0.534-6.3	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Radium-226 (pCi/L)	2011	5	0	0.3	0.1-0.3	No	Erosion of natural deposits
Radium-228 (pCi/L)	2011	5	0	1.5	0.8-1.5	No	Erosion of natural deposits
Selenium (ppb)	2011	50	50	5.35	5.35-5.35	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
Total Haloacetic Acids (ppb)	1/1/13-12/31/2013	60	0	5.51	3.95-7.18	No	By-products of the chlorination process
Total Trihalomethanes (ppb)	7/1/2012-6/30/2013	80	0	27.2625	12.2-54	No	By-products of the chlorination process
Total Coliform Bacteria (# positive samples)	2013	5% of monthly samples are positive	0	0	NA	No	Backflow or back siphonage; Naturally present in the environment
Uranium (ppb)	2013	30	0	28.1	12.6-28.1	No	Erosion of natural deposits
Uranium [Combined] (pCi/L)	2013	20	0	16	14-16	No	Erosion of natural deposits

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH% TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2013	1.3	0	0.64	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2013	15	0	1.06	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Sulfate (ppm)	2012	250	<250	244	235-244	No	Runoff/leaching from natural deposits; Industrial wastes

UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Water Hardness (grains/gal)	2012	20.1	16.4–20.1	Minerals in the groundwater from underground aquifer

¹Nitrate 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.

Definitions

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

grains/gal (grains per gallon): Grains of compound per gallon of water.

MCL (Maximum Contaminant Level): 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. Secondary MCLs (SMCLs) are established to regulate the aesthetics of drinking water (i.e., taste and odor).

MCLG (Maximum Contaminant Level Goal): 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.

MRDL (Maximum Residual Disinfectant Level): 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.

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.

NA: Not applicable

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

ppt (parts per trillion): One part substance per trillion parts water (or nanograms per liter).

<RL: Less than reporting limit.