Annual Drinking Water Quality Report

Kingbrook Rural Water System, Inc.

January 1, 2013 – December 31, 2013

Our Commitment * Our Profession

Introduction

The purpose of this report is to inform you of the quality of the drinking water that we provide. We are required by the U.S. Environmental Protection Agency (EPA) to test our water frequently for the presence and concentrations of over 80 different substances. The South Dakota Department of Environment and Natural Resources (DENR) reviews all of our testing data to ensure that 1) we are providing safe drinking water to our customers, and 2) we are complying with EPA regulations. Our constant goal is to provide you with a safe and dependable supply of drinking water.

We want you to fully understand the information contained in this report. If you have any questions, please contact:

Jolene King, Office Supervisor
Kingbrook Rural Water System
P.O. Box 299, Arlington, SD 57212 Phone: (800) 605-5279

We Welcome Your Input

Kingbrook Rural Water System employees work around the clock 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.

If you want to learn more, please attend any of our regularly scheduled Board meetings held at 8:00 P.M. on the third Monday of every month at our office in Arlington. (Please call the office for any scheduling changes.)

Please call our office if you have questions at 800-605-5279.

Where does our water come from?

Our water system is separated into three geographic areas, each of which has its own treatment plant and water source from groundwater drawn from wells. Phase I, located north of Bruce, and Phase III, located near Chester, both draw from the Big Sioux Aquifer; and Phase II, located north of DeSmet, draws from the East Fork of the Vermillion Aquifer.

Wellhead protection areas have been defined for each of our wellfields. DENR has performed an assessment of our source water and they have determined that the relative susceptibility rating for Kingbrook Phase I is low and for Kingbrook Phase II and Kingbrook Phase III is medium. For more information about your water, please call our office at 605-983-5074.

We are pleased to report that your drinking water is safe and meets or exceeds all Federal and State requirements.

Why do we test our drinking water?

The water we pump from our wells is from an underground aquifer, supplied by water that originally comes from the surface, and very slowly seeps down into the aquifer. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, and can pick up substances resulting from the presence of animals or from human activity. Too much of any of these substances, either naturally occurring or resulting from human activities, can be considered a contaminant.

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, or runoff from mining or farming activities.

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 occur naturally in some of the rocks in this region.

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.

Information provided by the EPA

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. FDA 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 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).

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/CDC guidelines on appropriate means to

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lessen the risk of infection by Cryptosporidium and other microbiological 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. Kingbrook Rural Water System is responsible for providing high quality drinking water, but 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 http://www.epa.gov/safewater/lead.

Definition of Terms

The following definitions are provided to assist you in understanding our water quality test results presented in the tables on the next two pages.

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 – 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) – a measure of radioactivity.

Positive Samples Per Month (PSPM)

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

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.

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.

N/A – Not Applicable

ND – Not Detected

***Optimum Flouride Level – 1.2*

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, 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.

What treatment does our water receive?

After we pump the water from our wells, we filter the water to remove iron and manganese. Although the iron and manganese in our water does not pose a health concern, these two naturally occurring substances can cause the water to appear brown or rust-colored, and can stain clothes and plumbing fixtures. We therefore treat our water to remove these substances.

Once the iron and manganese are removed, chlorine is added to kill bacteria and fluoride is added to protect against tooth decay. The finished water is pumped into an initial storage tank called a clearwell, from there into the distribution system, and ultimately to your home.

Detected Contaminants and Water Quality Data

The table at the end of the report lists the drinking water contaminants we detected during the 2013 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1 – December 31, 2013. The state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old. In these cases, where the last sample was taken prior to 2011, the sample date has been provided.

Summary of 2013 Water Quality Tests Results

Last year, we tested for more than 80 drinking water contaminants. Only a very small number of these, as shown in the table, registered a detectable quantity. Additionally, in each case, the detected quantity fell far short of the maximum limit.

Alpha Emitters are substances that naturally occur in rocks and soil. The levels detected are well below those allowed by the EPA.

Arsenic occurs as a result of natural deposits or from runoff from orchards. The levels detected are well below those allowed by the EPA.

Barium occurs as a result of erosion of natural deposits and was detected in the Big Sioux and Vermillion Aquifers at an insignificant quantity.

Chromium occurs as a result of erosion of natural deposits and was detected at levels dramatically lower than the highest level allowed by EPA.

Fluoride is naturally present at low levels in our water. In addition, we add fluoride to the water to promote healthy teeth.

Nitrate levels in our water in 2010 were found at amounts consistent with our area land use and significantly below the highest level allowed by EPA.

Selenium is a naturally occurring substance found in the soil and rocks of this region. Detected quantities were significantly below maximum allowable levels.

Lead and Copper levels are normally a function of home plumbing fixtures. 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 throughout the system 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 want to have your water tested. Additional information is available from the Safe Drinking Water Hotline (1-800-426-4791).

Total Trihalomethanes (TTHM) and Haloacetic Acids are chemicals produced by the chlorination of drinking water. Detected levels found were well below the highest level currently allowed by EPA.

2013 WATER QUALITY RESULTS

Kingbrook Phase I – Bruce Water Treatment Plant

Substance	Sample Date	Highest Level Detected	Range of Detection	Ideal Goals (MCLG)	Highest Level Allowed (MCL)	Units	Likely source of substance
Inorganic Substances							
Fluoride	4/15/13	1.47	1.05-1.47	4	4	ppm	Water additive to promote strong teeth
Nitrate (as Nitrogen)	3/19/13	1.0	N/A	10	10	ppm	Fertilizer runoff; leaking septic tanks; erosion of natural deposits
Antimony	11/14/12	0.2	ND-0.2	6	6	ppb	Discharge from petroleum refineries; fire retardants, ceramics; electronics; solder
Arsenic	11/14/12	2.0	ND-2	N/A	10	ppb	Erosion of natural deposits, runoff from orchards
Barium	11/14/12	0.084	0.074-0.084	2	2	ppm	Erosion of natural deposits
Chromium	11/14/12	4.0	1.2 - 4.0	100	100	ppb	Erosion of natural deposits
Selenium	11/14/12	1.2	N/A	50	50	ppb	Erosion of natural deposits
Water Quality Tests taken throughout the Distribution System							
Total Trihalomethanes	8/28/13	43.6	32.2-43.6	0	80	ppb	By-products of drinking water chlorination
Haloacetic Acids	8/28/13	19.3	12.3-19.3	0	60	ppb	By-products of drinking water chlorination
Total Trihalomethanes*	8/26/13	49.4	49.4	0	80	ppb	By-products of drinking water chlorination
Haloacetic Acids*	8/26/13	16.6	4.69-16.6	0	60	ppb	By-products of drinking water chlorination
*Brookings-Deuel Rural Water System (0430) test results. Kingbrook I (0431) water source originates from Joint Well Field Inc./Brookings-Deuel RWS 0430.							
Radioactive Substances							
Alpha emitters	5/13/09	3.6	N/A	0	15	pCi/l	Erosion of natural deposits

Water Quality Tests taken at the Consumer's Tap Located within Kingbrook Phase I

Substance	Sample Date	Level Detected (90th Percentile)	# of Samples above the AL	MCLG	MCL	Likely source of substance
Lead	6/28/12	3.6	0	0	AL = 15	Corrosion of household plumbing systems
Copper	7/3/12	0.21	0	0	AL = 1.3	Corrosion of household plumbing systems

Kingbrook Phase II – De Smet Water Treatment Plant

Substance	Sample Date	Highest Level Detected	Range of Detection	Ideal Goals (MCLG)	Highest Level Allowed (MCL)	Units	Likely source of substance
Inorganic Substances							
Arsenic	11/5/12	2.0	N/A	N/A	10	ppb	Erosion of natural deposits, runoff from orchards
Barium	11/5/12	0.027	N/A	2	2	ppm	Erosion of natural deposits
Chromium	11/5/12	8.4	N/A	100	100	ppb	Erosion of natural deposits
Fluoride	7/8/13	1.45	0.93-1.45	4	4	ppm	Water additive to promote strong teeth
Nitrate (as Nitrogen)	5/15/13	<0.2	N/A	10	10	ppm	Fertilizer runoff; leaking septic tanks; erosion of natural deposits
Selenium	11/5/12	1.1	N/A	50	50	ppb	Erosion of natural deposits
Water Quality Tests taken throughout the Distribution System							
Total Trihalomethanes	8/28/13	41.4	30.8-41.4	N/A	80	ppb	By-products of drinking water chlorination
Haloacetic Acids	8/28/13	16.1	12-16.1	N/A	60	ppb	By-products of drinking water chlorination

Water Quality Tests taken at the Consumer's Tap Located within Kingbrook Phase II

Substance	Sample Date	Level Detected (90th Percentile)	# of Samples above the AL	MCLG	MCL	Units	Likely source of substance
Lead	7/30/12	6.70	1	0	AL = 15	ppb	Corrosion of household plumbing systems
Copper	7/30/12	0.33	0	0	AL = 1.3	ppm	Corrosion of household plumbing systems

Kingbrook Phase III – Chester Water Treatment Plant

Substance	Sample Date	Highest Level Detected	Range of Detection	Ideal Goals (MCLG)	Highest Level Allowed (MCL)	Units	Likely source of substance
Inorganic Substances							
Barium	5/15/13	0.016	N/A	2	2	ppm	Erosion of natural deposits
Chromium	5/15/13	1.1	N/A	100	100	ppb	Erosion of natural deposits
Fluoride	7/16/13	1.31	1.07-1.31	4	4	ppm	Water additive to promote strong teeth
Nitrate (as Nitrogen)	5/15/13	1.1	N/A	10	10	ppm	Fertilizer runoff; leaking septic tanks; erosion of natural deposits
Selenium	5/15/13	1.3	N/A	50	50	ppb	Erosion of natural deposits
Water Quality Tests taken throughout the Distribution System							
Total Trihalomethanes	8/22/13	44.3	41.6-44.3	0	80	ppb	By-products of drinking water chlorination
Haloacetic Acids	8/22/13	19.7	17.6-19.7	0	60	ppb	By-products of drinking water chlorination

Water Quality Tests taken at the Consumer's Tap Located within Kingbrook Phase III

Substance	Sample Date	Level Detected (90th Percentile)	# of Samples above the AL	MCLG	MCL	Units	Likely source of substance
Lead	6/17/13	2.5	0	0	AL = 15		Corrosion of household plumbing systems
Copper	6/14/13	0.82	0	0	AL = 1.3		Corrosion of household plumbing systems

Units and Abbreviations

pCi/L: picocuries per liter (a measure of radioactivity)
ppm: parts per million, or milligrams per liter (mg/l)
ppb: parts per billion, or micrograms per liter (ug/l)