Lyon & Sioux Rural Water System, Inc.
2020 Water Quality Report *(reporting for 2019)*

We are pleased to provide you with this year's Annual Water Quality Report as required by the Safe Drinking Water Act (SDWA). This report contains important information regarding the water quality in our water system.

Where does my water come from?
The Lyon & Sioux Rural Water System obtains water from one or more groundwater aquifers, and in certain areas we purchase water from another source. The attached map will show where your drinking water source is. You can then find the test results for that source in the following tables. Every aquifer has a degree of susceptibility to contamination because of the characteristics of the aquifer, overlying materials, and human activity. Susceptibility to contamination generally increases with shallower aquifers, increasing permeability of the aquifer and overlying materials, nearby development or agricultural activity, and abandoned or poorly maintained wells. A detailed evaluation of your source water was completed by the Iowa Department of Natural Resources and is available from our office at 712-472-3755.

Why are there contaminants in my drinking water?/ Is my water safe?
All sources of 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. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. 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).

In order to insure that tap water is safe to drink, EPA prescribes regulations that 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.

Lyon & Sioux RWS tests for more than 76 constituents. On the following tables, we have listed only those constituents with any level of detection. All other constituents were below detecting levels. Not all tests are required each and every year. The data in the table are from the most recent testing done in accordance with the Federal Safe Drinking Water Act Regulations.

ROCK RAPIDS WATER SOURCE

SOURCE WATER ASSESSMENT INFORMATION - This area of our water system obtains all of its water from Rock Rapids Municipal Water Works.

CONTAMINANT	MCL - (MCLG)	Compliance		Date	Violation	Source
		Type	Value & (Range)		Yes/No	
Copper (ppm)	AL=1.3 (1.3)	90th	0.601 (ND – 1.2093	2018	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	AL=15 (0)	90th	1.80 (ND - 2)	2018	No	Corrosion of household plumbing systems; erosion of natural deposits
DISTRIBUTION SYSTEM						
Chlorine (ppm)	MRDL=4.0 (MRDLG=4.0)	RAA	1.16 (0.97-1.29)	12/31/2019	No	Water additive used to control microbes
Total Trihalomethanes (ppb) [TTHM]	80 (N/A)	LRAA	63 (63-63)	09/30/19	No	By-products of drinking water chlorination
Total Haloacetic Acids (ppb) [HAA5]	60 (N/A)	LRAA	32(32-32)	09/30/19	No	By-products of drinking water disinfection
ROCK RAPIDS MUNICIPAL WATER WORKS						
Fluoride (ppm)	4(4)	SGL	0.376	11/13/19	No	Water additive which promotes strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories
Sodium (ppm)	N/A	SGL	42.55	12/17/18	No	Erosion of natural deposits; Added to water during treatment process
Nitrate [as N] (ppm)	10 (10)	SGL	4.44 (1.65 – 4.44)	2019	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

Note: Contaminants with dates indicate results from the most recent testing done in accordance with regulations.

KLONDIKE AND LARCHWOOD WATER SOURCES

SOURCE WATER ASSESSMENT INFORMATION – Klondike Wells - This water supply obtains a portion of its water from the Lower Big Sioux River sand and gravel of the alluvial aquifer. The alluvial aquifer was determined to be highly susceptible to contamination because the characteristics of the aquifer and overlying materials provide little protection from contamination at the land surface. The alluvial wells will be highly susceptible to surface contaminants such as leaking underground storage tanks, contaminant spills, and excess fertilizer application.
Larchwood Deep Wells -This water supply obtains a portion of its water from the sandstone of the Dakota aquifer. The Dakota aquifer was determined to have low susceptibility to contamination because the characteristics of the aquifer and overlying

materials provide natural protection from contaminants at the land surface. The Dakota wells will have low susceptibility to surface contaminants such as leaking underground storage tanks, contaminant spills, and excess fertilizer application.

CONTAMINANT	MCL - (MCLG)	Compliance		Date	Violation	Source
		Type	Value & (Range)		Yes/No	
Copper (ppm)	AL=1.3 (1.3)	90th	0.367 (0.007–0.406)	2019	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	AL=15 (0)	90th	5.80 (ND -8)	2019	No	Corrosion of household plumbing systems; erosion of natural deposits
DISTRIBUTION SYSTEM						
Chlorine (ppm)	MRDL=4.0 (MRDLG=4.0)	RAA	1.71(1.37- 2.03)	12/31/2019	No	Water additive used to control microbes
Total Trihalomethanes (ppb) [TTHM]	80 (N/A)	LRAA	37.00(37-37)	09/30/2019	No	By-products of drinking water chlorination
Total Haloacetic Acids (ppb) [HAA5]	60 (N/A)	LRAA	16.00(16-16)	09/30/2019	No	By-products of drinking water disinfection
KLONDIKE WATER TREATMENT PLANT						
Sodium (ppm)	N/A (N/A)	SGL	18.85	10/15/2019	No	Erosion of natural deposits; Added to water during treatment process
Nitrate [as N] (ppm)	10 (10)	SGL	2.73(0.75 – 2.73)	2019	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
LARCHWOOD WATER TREATMENT PLANT						
Gross Alpha (pCi/L)	15 (0)	SGL	2.1	02/03/2015	No	Erosion of natural deposits
Combined Radium (pCi/L)	5 (0)	SGL	1.3	02/03/2015	No	Erosion of natural deposits
Sodium (ppm)	N/A (N/A)	SGL	85.94	02/18/2017	No	Erosion of natural deposits; Added to water during treatment process
Nitrate (as N) (ppm)	10 (10)	SGL	0.68	2019	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

Note: Contaminants with dates indicate results from the most recent testing done in accordance with regulations.

LEWIS & CLARK REGIONAL WATER SYSTEM SOURCE

SOURCE WATER ASSESSMENT INFORMATION –This water supply originates from a source adjacent to the Missourii River. This source is called the Missouri: Elk Point Aquifer.

CONTAMINANT	MCL - (MCLG)	Compliance		Date	Violation	Source
		Type	Value & (Range)		Yes/No	
Fluoride (ppm)	4 (4)	SGL	0.75 (0.37-0.75)	12/12/19	No	Water additive which promotes strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories
Nitrate [as N] (ppm)	10 (10)	SGL	0.7	10/07/19	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

Note: Contaminants with dates indicate results from the most recent testing done in accordance with regulations.

Doon Water Source

SOURCE WATER ASSESSMENT INFORMATION - The Doon water supply obtains its water from the Rock sand and gravel of the alluvial aquifer. The alluvial aquifer was determined to be highly susceptible to contamination because the characteristics of the aquifer and overlying materials provide little protection from contamination at the land surface. The alluvial wells will be highly susceptible to surface contaminants such as leaking underground storage tanks, contaminant spills, and excess fertilizer application.

CONTAMINANT	MCL - (MCLG)	Compliance		Date	Violation	Source
		Type	Value & (Range)		Yes/No	
Lead (ppb)	AL=15 (0)	90th	4.00 (ND – 4)	2018	No	Corrosion of household plumbing systems; erosion of natural deposits
Copper (ppm)	AL=1.3 (1.3)	90th	0.5784 (0.0127 – 0.8810)	2018	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
DISTRIBUTION SYSTEM						
Chlorine (ppm)	MRDL=4.0 (MRDLG=4.0)	RAA	1.66 (1.51–1.76)	12/31/2019	No	Water additive used to control microbes
Total Trihalomethanes (ppb) [TTHM]	80 (N/A)	LRAA	25.00(25-25)	09/30/2019	No	By-products of drinking water chlorination
Total Haloacetic Acids (ppb) [HAA5]	60 (N/A)	LRAA	20.00(20-20)	09/30/2019	No	By-products of drinking water disinfection
DOON WATER TREATMENT PLANT						

Gross Alpha (pCi/L)	15 (0)	SGL	6.7	06/02/2015	No	Erosion of natural deposits
Sodium (ppm)	N/A (N/A)	SGL	12.81	05/07/2019	No	Erosion of natural deposits; Added to water during treatment process
Nitrate [as N] (ppm)	10 (10)	SGL	7.33 (5.74 –7.33)	2019	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Beloit #1 Well						
Nitrate [as N] (ppm)	10 (10)	SGL	0.11	2017	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sodium (ppm)	N/A (N/A)	SGL	15.72	06/13/2017	No	Erosion of natural deposits; Added to water during treatment process

Note: Contaminants with dates indicate results from the most recent testing done in accordance with regulations.

Boyden and George Water Sources

SOURCE WATER ASSESSMENT INFORMATION - This water supply obtains its water from the Rock sand and gravel of the alluvial aquifer. The alluvial aquifer was determined to be highly susceptible to contamination because the characteristics of the aquifer and overlying materials provide little protection from contamination at the land surface. The alluvial wells will be highly susceptible to surface contaminants such as leaking underground storage tanks, contaminant spills, and excess fertilizer application.

CONTAMINANT	MCL - (MCLG)	Compliance		Date	Violation	Source
		Type	Value & (Range)		Yes/No	
DISTRIBUTION SYSTEM						
Copper (ppm)	AL=1.3 (1.3)	90th	0.1544 (0.0049-0.1843)	2017	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	AL=15 (0)	90th	3.30(ND-3)	2017	No	Corrosion of household plumbing systems; erosion of natural deposits
Chlorine (ppm)	MRDL=4.0 (MRDLG=4.0)	RAA	1.62 (1.28–1.88)	12/31/2019	No	Water additive used to control microbes
Total Trihalomethanes (ppb) [TTHM]	80 (N/A)	LRAA	38.00(38-38)	09/30/2019	No	By-products of drinking water chlorination
Total Haloacetic Acids (ppb) [HAA5]	60 (N/A)	LRAA	25.00(25-25)	09/30/2019	No	By-products of drinking water disinfection
G.EORGE WATER TREATMENT PLANT						
Gross Alpha (pCi/L)	15 (0)	SGL	5.4	06/02/2015	No	Erosion of natural deposits
Sodium (ppm)	N/A (N/A)	SGL	12.99	04/17/2018	No	Erosion of natural deposits; Added to water during treatment process
Nitrate [as N] (ppm)	10 (10)	SGL	4.47(3.94 – 4.47)	2019	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
BOYDEN WATER TREATMENT PLANT						
Combined Radium (pCi/L)	5 (0)	SGL	1.3	08/20/2019	No	Erosion of natural deposits.
Uranium (ppb)	30 (0)	SGL	27	08/20/2019	No	Erosion of natural deposits.
Sodium (ppm)	N/A	SGL	15.63	04/17/2018	No	Erosion of natural deposits; Added to water during treatment process
Nitrate [as N] (ppm)	10 (10)	SGL	4.58(2.54 - 4.58)	2019	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

Note: In October, 2018, one sample from the distribution system tested positive for coliform bacteria. Subsequent samples were taken from the original sample site, from a site upstream and from a site downstream. These samples showed NO coliform bacteria. Because of the positive coliform bacteria sample, we were required to sample directly from two of the wells at the Otter Creek wellfield (before treatment). One of these samples tested positive for E.coli. Subsequent samples from the same well showed NO E.coli. THE SAMPLE THAT SHOWED POSITIVE E.coli WAS NOT TREATED WATER AND NEVER ENTERED THE DISTRIBUTION SYSTEM.

Definitions

In the test results 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:

Maximum Contaminant Level (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 (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 (MRDL) – The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for microbial contaminants. MRDLs are set for chloramines, chlorine, chlorine dioxide.
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.
RAA – Running Annual Average
LRAA – Locational Running Annual Average
Treatment Technique(TT) - A required process intended to reduce the level of a contaminant in drinking water.
Action Level (AL) - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow

N/A – not applicable

ND – not detected; laboratory analysis indicates that the constituent is not present
SGL – Single Sample Result *Action Level (AL)* - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow
TCR – Total Coliform Rule

Parts per million (ppm) – one part per million corresponds to one minute in two years or a single penny in $10,000.
Parts per billion (ppb) – one part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.
RTCR – Revised Total Coliform Rule

GENERAL INFORMATION

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 lessen the risk of infection by *Cryptosporidium* and other microbial 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. LSRWS 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.

ADDITIONAL HEALTH INFORMATION

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.

CONTACT INFORMATION

For questions regarding this information or how you can get involved in decisions regarding the water system, please contact LYON & SIOUX RURAL WATER SYSTEM at 712-472-3755.
We're proud that your drinking water meets or exceeds all Federal and State requirements. We have learned through our monitoring and testing that some constituents have been detected. The EPA has determined that your water **IS SAFE** at these levels.

Where Does My Water Come From?

The map below shows our water coverage area including the water sources. If you're unsure which source your water comes from or would like more information, contact our office for assistance.

Roll over the area you live to see information below the map about your water source.