Annual Drinking Water Quality Report

2016

BRWCD-Riverside/North Garland #UTAH02070

We're pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality of the water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. Our water sources have been determined to be from groundwater sources, the **Newman Well and the Backup Well located in the Bothwell Pocket and Tremonton City's sources.**

The Drinking Water Source Protection Plan for Bear River Water Conservancy District is available for your review. It contains information about source protection zones, potential contamination sources and management strategies to protect our drinking water. Our sources have been determined to have a low level of susceptibility from potential contamination from sources such as septic tanks, roads, residential areas, industrial areas, etc. We have also developed management strategies to further protect our sources from contamination. Please contact us if you have questions or concerns about our source protection plan.

There are many connections to our water distribution system. When connections are properly installed and maintained, the concerns are very minimal. However, unapproved and improper piping changes or connections can adversely affect not only the availability, but also the quality of the water. A cross connection may let polluted water or even chemicals mingle into the water supply system when not properly protected. This not only compromises the water quality but can also affect your health. So, what can you do? Do not make or allow improper connections at your homes. Even that unprotected garden hose lying in the puddle next to the driveway is a cross connection. The unprotected lawn sprinkler system after you have fertilized or sprayed is also a cross connection. When the cross connection is allowed to exist at your home, it will affect you and your family first. If you'd like to learn more about helping to protect the quality of our water, call us for further information about ways you can help.

This report shows our water quality and what it means to you our customer.

If you have any questions about this report or concerning your water utility, please contact **Voneene Jorgensen, General Manager at the BRWCD at 435- 723-7034**. 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 held on **fourth Wednesday of each month at 7:00 p.m. in the BRWCD District Office Conference Room at 102 West Forest Street, Brigham City, Utah**.

Bear River Water Conservancy District routinely monitors for constituents in our drinking water in accordance with the Federal and Utah State laws. The following table shows the results of our monitoring for the period of January 1st to December 31st, 2016. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some constituents. It's important to remember that the presence of these constituents does not necessarily pose a health risk. 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:

Non-Detects (ND) - laboratory analysis indicates that the constituent is not present.

ND/Low - High - For water systems that have multiple sources of water, the Utah Division of Drinking Water has given water systems the option of listing the test results of the constituents in one table, instead of multiple tables. To accomplish this, the lowest and highest values detected in the multiple sources are recorded in the same space in the report table.

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

Parts per trillion (ppt) or Nanograms per liter (nanograms/l) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.

Parts per quadrillion (ppq) or Picograms per liter (picograms/l) - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in $10,000,000,000,000.

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

Millirems per year (mrem/yr) - measure of radiation absorbed by the body.

Million Fibers per Liter (MFL) - million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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 (MCL) - 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 (MCLG) - 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.

Date- Because of required sampling time frames i.e. yearly, 3 years, 4 years and 6 years, sampling dates may seem out-dated.

Waivers (W)- Because some chemicals are not used or stored in areas around drinking water sources, some water systems have been given waivers that exempt them from having to take certain chemical samples, these waivers are also tied to Drinking Water Source Protection Plans.

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TEST RESULTS

The data presented in this report is from the most recent testing done in accordance with the regulations.

Contaminant	Violation Y/N	Level Detected ND/Low - High	Unit Measurement	MCLG	MCL	Date Sampled	Likely Source of Contamination
MICROBIOLOGICAL CONTAMINANTS							
Total Coliform Bacteria	N	ND	NA	0	presence of coliform bacteria in 5% of monthly samples	2016	Naturally present in the environment
Fecal Coliform and *E. coli*	N	ND	NA	0	a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or *E. coli* positive	2016	Human and animal fecal waste
Turbidity for Ground Water	N	0.05 – 0.93	NTU	NA	5	2016	Soil Runoff
Turbidity for Surface Water	N	NA	NTU	NA	0.5 in at least 95% of the samples and must never exceed 5.0	2016	Soil Runoff (highest single measurement & the lowest monthly percentage of samples meeting the turbidity limits)
RADIOACTIVE CONTAMINANTS							
Alpha Emitters	N	ND – 7	pCi/1	0	15	2014	Erosion of natural deposits
Beta/photon Emitters*	N	ND – 16	pCi/l	0	50	2014	Decay of natural and man-made deposits
Combined Radium	N	ND – .27	pCi/1	0	5	2014	Erosion of natural deposits
INORGANIC CONTAMINANTS							
Antimony	N	ND	ppb	6	6	2016	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic	N	ND – 3.1	ppb	10	10	2016	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes

Asbestos	N	ND	MFL	7	7	2011	Decay of asbestos cement water mains; erosion of natural deposits
Barium	N	40 – 120	ppb	2000	2000	2016	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beryllium	N	ND	ppb	4	4	2016	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
Cadmium	N	ND	ppb	5	5	2016	Corrosion of galvanized pipes, erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
Chromium	N	ND	ppb	100	100	2016	Discharge from steel and pulp mills; erosion of natural deposits
Copper a. 90% result b. # of sites that exceed AL	N	a. 201 b. 0	ppb	1300	AL=1300	2014	Corrosion of household plumbing systems, erosion of natural deposits; leaching from wood preservatives
Cyanide	N	ND	ppb	200	200	2016	Discharge from steel/metal factories; discharge from plastic and fertilizer factory
Fluoride	N	ND-200	ppb	4000	4000	2016	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Lead a. 90% result b. # of sites that exceed AL	N	a. 2.1 b. 0	ppb	0	AL=15	2014	Corrosion of household plumbing systems; erosion of natural deposits
Mercury (inorganic)	N	ND	ppb	2	2	2016	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills, runoff from crop land
Nitrate (as Nitrogen)	N	1200 – 5500	ppb	10000	10000	2016	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (as Nitrogen)	N	ND	ppb	10000	10000	2016	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium	N	ND – 5.1	ppm	50	50	2016	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
Sodium	N	8 – 120	ppm	None set by EPA		2016	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills.
Sulfate	N	15 – 65	ppm	500*	500	2016	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills, runoff from cropland
Thallium	N	ND	ppb	1	2	2016	Leaching from ore-processing sites; discharge from electronics; glass and drug factories
TDS (Total Dissolved	N	180-830	ppm	1000**	1000**	2016	Erosion of natural deposits

Solids)							
Contaminant	Violation Y/N	Level Detected ND/Low-High	Unit Measurement	MCLG	MCL	Date Sampled	Likely Source of Contamination
SYNTHETIC ORGANIC CONTAMINANTS INCLUDING PESTICIDES AND HERBICIDES							
2,4-D	N	ND	ppb	70	70	2015	Runoff from herbicide used on row crops
2,4,5-TP (Silvex)	N	ND	ppb	50	50	2015	Residue of banned herbicide
Acylamide	TT	W	N/A	0	TT	2015	Added to water during sewage/wastewater treatment
Alachlor	N	ND	ppb	0	2	2015	Runoff from herbicide used on row crops
Atrazine	N	ND	ppb	3	3	2015	Runoff from herbicide used on row crops
Benzo(a)pyrene (PAHs)	N	ND	ppt	0	200	2015	Leaching from linings of water storage tanks and distribution lines
Carbofuran	N	ND	ppb	40	40	2015	Leaching from soil fumigant used on rice and alfalfa
Chlordane	N	ND	ppb	0	2	2015	Residue of banned termiticide
Dalapon	N	ND	ppb	200	200	2015	Runoff from herbicide use
Di (2-ethylhexyl) adipate	N	ND	ppb	400	400	2015	Discharge from chemical factories
Di (2-ethylhexyl) phthalates	N	ND	ppb	0	6	2015	Discharge from rubber and chemical factories
Dibromochloro-propane	N	W	ppt	0	200	2015	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples and orchards
Dinoseb	N	ND	ppb	7	7	2015	Runoff from herbicide used on soybeans and vegetables
Dioxin (2,3,7,8-TCDD)	N	W	ppb	0	30	2015	Emissions from waste incineration and other combustion; discharge from chemical factories
Diquat	N	W	ppb	20	20	2015	Runoff from herbicide use
Endothall	N	W	ppb	100	100	2015	Runoff from herbicide use
Endrin	N	ND	ppb	2	2	2015	Residue of banned insecticide
Epichlorohydrin	TT	W	N/A	0	TT	2015	Discharge from industrial chemical factories; an impurity of some water treatment chemicals
Ethylenedibromide	N	W	ppt	0	50	2015	Discharge from petroleum refineries
Glyphosate	N	W	ppb	700	700	2015	Runoff from herbicide use
Heptachlor	N	ND	ppt	0	400	2015	Residue of banned termiticide

Heptachlor epoxside	N	ND	ppt	0	200	2015	Breakdown of heptachlor
Hexachloro- benzene	N	ND	ppb	0	1	2015	Discharge from metal refineries and Discharge from metal refineries agricultural chemical factories
Hexachloro cyclopentadiene	N	ND	ppb	50	50	2015	Discharge from chemical factories
Lindane	N	ND	ppt	200	200	2015	Runoff/leaching from insecticide used on cattle, lumber, gardens
Methoxychlor	N	ND	ppb	40	40	2015	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
Oxamyl (Vydate)	N	ND	ppb	200	200	2015	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
PCBs (Polychlorinated biphenyls)	N	ND	ppt	0	500	2015	Runoff from landfills; discharge of waste chemicals
Pentachlorophenol	N	ND	ppb	0	1	2015	Discharge from wood preserving factories
Picloram	N	ND	ppb	500	500	2015	Herbicide runoff
Simazine	N	ND	ppb	4	4	2015	Herbicide runoff
Toxaphene	N	ND	ppb	0	3	2015	Runoff/leaching from insecticide used on cotton and cattle
VOLATILE ORGANIC CONTAMINANTS							
Benzene	N	ND	ppb	0	5	2015	Discharge from factories; leaching from gas storage tanks and landfills
Carbon tetrachloride	N	ND	ppb	0	5	2015	Discharge from chemical plants and other industrial activities
Chlorobenzene	N	ND	ppb	100	100	2015	Discharge from chemical and agricultural chemical factories
o-Dichlorobenzene	N	ND	ppb	600	600	2015	Discharge from industrial chemical factories
p-Dichloro-benzene	N	ND	ppb	75	75	2015	Discharge from industrial chemical factories
1,2 - Dichloroethane	N	ND	ppb	0	5	2015	Discharge from industrial chemical factories
1,1 - Dichloroethylene	N	ND	ppb	7	7	2015	Discharge from industrial chemical factories
cis 1,2 - Dichloroethylene	N	ND	ppb	70	70	2015	Discharge from industrial chemical factories
trans - 1.2 - Dichloroethylene	N	ND	ppb	100	100	2015	Discharge from industrial chemical factories
Dichloromethane	N	ND	ppb	0	5	2015	Discharge from pharmaceutical and chemical factories

1,2 - Dichloropropane	N	ND	ppb	0	5	2015	Discharge from industrial chemical factories
Ethylbenzene	N	ND	ppb	700	700	2015	Discharge from petroleum refineries
Styrene	N	ND	ppb	100	100	2015	Discharge from rubber and plastic factories; leaching from landfills
Tetrachloroethylene	N	ND	ppb	0	5	2015	Discharge from factories and dry cleaners
1,2,4 - Trichlorobenzene	N	ND	ppb	70	70	2015	Discharge from textile-finishing factories
1,1,1 - Trichloroethane	N	ND	ppb	200	200	2015	Discharge from metal degreasing sites and other factories
1,1,2 - Trichloroethane	N	ND	ppb	3	5	2015	Discharge from industrial chemical factories
Trichloroethylene	N	ND	ppb	0	5	2015	Discharge from metal degreasing sites and other factories
Toluene	N	ND	ppb	1000	1000	2015	Discharge from petroleum factories
Vinyl Chloride	N	ND	ppb	0	2	2015	Leaching from PVC piping; discharge from plastics factories
Xylenes	N	ND	ppb	10000	10000	2015	Discharge from petroleum factories; discharge from chemical factories

DISINFECTION BY-PRODUCTS

TTHM Total Trihalomethanes	N	7.1	ppb	0	80	2016	By-product of drinking water disinfection
Haloacetic Acids	N	ND	ppb	0	60	2016	By-product of drinking water disinfection
Chlorine	N	.16	ppm	4	4	2016	By-product of drinking water disinfection

We constantly monitor for various constituents in the water supply to meet all regulatory requirements. In November 2016 we failed to perform all the required tests for coliform bacteria, or submit the sample results on time. Water quality may change without any visible indication due to unanticipated environmental factors. For this reason, we are required to sample for coliform bacteria on a monthly basis. This violation does not necessarily pose a health risk. We have reviewed why we failed to take our routine coliform bacteria tests and have taken steps to ensure that it will not happen again.

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. Beaver Dam 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.

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.

All sources of drinking water are subject to potential contamination by constituents that are naturally occurring or man-made. Those constituents can be microbes, organic or inorganic chemicals, or radioactive materials. All 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 at 1-800-426-4791.

MCLs 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.