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## 2007 ANNUAL CITY WATER REPORT

### KAYSVILLE CITY ANNUAL DRINKING WATER QUALITY REPORT

APRIL 2007

We're very pleased to provide you with this year's Annual Water Quality Report. We want to keep you informed about the excellent water and services we have delivered to you over the past year. Our goal is, and always has been, to provide to you a safe and dependable supply of drinking water. We are pleased to report that our drinking water is safe and meets federal and state requirements. This report shows our water quality and what it means to you, our customer. If you have any questions about this report or matters concerning your water utility, please contact Jeff Brown at 544-8112. 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 City Council meetings. They are held on the first and third Tuesday of each month at 7:00p.m.

**Last year, your tap water met all U. S. Environmental Protection Agency (EPA) and state drinking water health standards.**

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.

#### **WHERE DOES MY WATER COME FROM?**

Kaysville City water source is Weber Basin Water Conservancy District, which comes primarily from the Weber River Basin which includes parts of Summit, and all of Morgan, Weber and Davis Counties. The basin, drained by the Weber River and its tributaries, covers over 2,700 miles. Major tributaries to the Weber River are: Beaver Creek, Silver Creek, Chalk Creek, Echo Canyon Creek, Lost Creek, East Canyon Creek, and the Ogden River. Along the Wasatch Front, supplemental water comes from ~~Strong's Creek, French Creek, Shepard Creek, Farmington Creek, Steed Creek, Ricks Creek and Stone Creek.~~ Weber Basin District operates seven large storage reservoirs: Smith and Morehouse, Rockport, East Canyon, Lost Creek, Causey, Pineview, and Willard Bay. Echo Reservoir is not operated by the District. Of these reservoirs, only four are used for drinking water purposes: Smith and Morehouse, Rockport, East Canyon and Lost Creek. District water from the remaining reservoirs is primarily used for irrigation purposes.

#### **GROUNDWATER**

The Weber Basin Water Conservancy District's drinking water comes from the Weber Basin River and from several creeks along the Wasatch Front. Groundwater, primarily from the Delta Aquifer, is used to supplement surface water sources.

#### **HOW DRINKING WATER GETS TO YOU**

Although a portion of drinking water originates as groundwater and is extracted from deep wells, the majority of the drinking water supply begins as surface water from the headwaters of the Weber River. Water is directed into a canal by a diversion dam. The water then flows through this canal whereupon it enters two large aqueducts. Several creeks along the Wasatch Front can feed into this aqueduct. From there, water is transported to each of the District's water treatment plants. After ~~complete treatment~~, water is delivered to the cities or water improvement districts for final distribution to individual users.

#### **HOW THE CITY PROTECTS DRINKING WATER SOURCES**

Weber Basin Water Conservancy district has completed a Drinking Water Source Protection Plan for all its surface water public drinking water sources. The Drinking Water Source Protection program includes identification of the area from which the drinking water source receives water, an assessment of the potential contamination threats to the source within this area, and management programs to help control both existing and future potential sources of contamination. Copies of this plan can be obtained from the District office for a nominal fee. The State Division of Drinking Water also has a copy on file. Each significant potential source of contamination has been analyzed and assigned a qualitative susceptibility rating according to its potential to impact the water supply. This rating includes such factors as the likelihood of a release of potential contaminants, the ability of the potential contaminant to travel to the river or stream and the ability of the intake to bypass contamination.

Descriptions of the significant potential sources of contamination located with in the area tributary to the District's surface water sources are listed below.

Potential sources of Contamination	Description of Contaminants	Potential risk to Surface Water Score
Transportation of hazardous material along roadways and railroads	Accidents along highways and other major roads and along railroads could lead to spills of hazardous materials, which could lead to contamination of surface water sources.	67 to 70
Industrial manufacturers and related companies and large commercial production and maintenance operations	Products and materials are used and stored in various quantities at these companies including acids, solvents, waste oils, other oils, gasoline, diesel fuel, and other chemicals. Spills of these products and materials Could lead to contamination of surface water sources.	55 to 69
Rural residential areas	Household septic systems that are failing contain bacteria and viral Pathogens that are discharged directly into the ground and may eventually enter the surface water source. Fuels, fertilizer, and pesticides that may be used and stored also have the potential to contaminate.	54 to 68
Agricultural activities	Runoff containing fertilizers, herbicides, and pesticides applied to croplands could enter the surface water sources. Also, runoff containing bacteria and viruses from pastures or animal farms has the potential to enter the surface water sources.	30 to 64
Mineral producers	Tunnels or striped land from mining operations could lead to higher acidity or sediment loads in surface water sources	42 to 55
Sewage treatment facilities	Untreated sewage could discharge directly into the surface water source in extreme or emergency conditions	22 to 35
Camping areas and other recreational activities	Camping wastes and fuel used for recreational vehicles have the potential to be spilled and enter the surface water sources.	25 to 27
Underground fuel storage	Fuel in underground storage tanks may enter groundwater and eventually reach the surface water sources if a leak occurs in the tank.	10 to 25

**The susceptibility of the various water sources are given below.**

WATER SOURCE	SUSCEPTIBILITY TO CONTAMINATION	RATIONALE FOR SUSCEPTIBILITY RANKING
Weber River Watershed	High	Presence of many potential sources of contamination
Farmington Creek Canyon	Moderate	Presence of a few potential source of contamination
Burch Creek, Shepard Creek, Steed Creek Ricks Creek, and Stone Creek	Low	No potential sources of contamination

#### **WELLHEAD PROTECTION PLANS**

A Wellhead Protection Plan has been written and implemented for all District's groundwater sources. These plans define the protection zones for each of the wells, list the potential contamination sources within the zones, and identify what safeguards are in place to protect the aquifer (natural underground water storage formations made of silts, sands, gravels, and cobbles) from the contamination sources. It also consists of a plan to further monitor the contamination sources and educate those businesses or industries that may become sources.

#### **HOW CAN I HELP PREVENT WATER POLLUTION?**

The water you drink comes from reservoirs and pumped from deep wells. Paint, used motor oil, gasoline, antifreeze, or lawn and garden chemicals that you dispose of in the gutter or your backyard can migrate to the rivers or filter down through the ground and pollute aquifers.

Please don't spoil the water supply for yourself and everyone else! Dispose of paint, used motor oil and other hazardous chemicals in a proper and safe manner. You can call the Division of Environmental Health at 801-944-6697 for the nearest location for hazardous waste disposal.

### **WHY ARE THERE CONTAMINANTS IN MY DRINKING WATER?**

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. It's important to remember that the presence of these constituents does not necessarily pose 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. The sources of our drinking water include rivers, streams, reservoirs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Below are some of these contaminants and their typical sources.

**Microbial contaminants**, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

**Inorganic contaminants**, such as salts and metals, can be naturally-occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining or farming.

**Pesticides and herbicides** 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, are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

**Radioactive contaminants** can be naturally occurring or be the result of oil and gas production and mining activities.

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. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

### **HOW ARE THE CONTAMINANTS REMOVED?**

Raw water typically contains varying amounts of dissolved constituents and suspended particles. Complete water treatment is simply the process of trying to remove these dissolved constituents and suspended particles. The Weber Basin Water Conservancy District operates three water treatment plants. The basic stages of water treatment employed at each of these plants are coagulation and flocculation, sedimentation, filtration, and disinfection.

**COAGULATION AND FLOCCULATION** is the first stage in water treatment. The goal of this stage is to bind up as much as possible the suspended particles contained in the raw water. This is accomplished by adding a coagulant to the raw water as it enters the plant from the aqueduct. What is produced from the mixing of the coagulant with the raw water are tuft-like aggregates called flocs. Flocculation is the name of the process. Over time the smaller aggregates of floc become larger particles of floc as more suspended matter is bound.

**SEDIMENTATION** is the second stage of water treatment. The goal of this stage is to settle out the floc and heavier materials. This is accomplished as the larger particles of floc and other heavy suspended material settle out of the water in long sedimentation basins. The resulting sediment at the bottom of the basin is sent to drying beds while the cleaner water is drained off the sedimentation basin and sent to filtration.

**FILTRATION** is the third stage of water treatment. The goal of the filtration stage is to remove as much of the remaining suspended particles and dissolved constituents as possible. This is accomplished by passing the water through a filter composed of sand and granulated activated carbon.

**DISINFECTION** is the final stage of water treatment. The goal of this stage is to destroy or inactivate disease-causing organisms. This is accomplished by adding chlorine to the filtered water.

### **DO I NEED TO TAKE SPECIAL PRECAUTIONS?**

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 transplant, 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. EPC/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infections by Cryptosporidium and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

## **RESULTS OF CRYPTOSPORIDIUM MONITORING**

We are required to test our sources of drinking water, as well as our treated tap water, for the presence of Cryptosporidium. We test for this contaminant quarterly in both source water and treated water. Although small amounts were found in the source water, we did not find any in the treated water that goes to your tap. Cryptosporidium is a microbial parasite which is found in surface water throughout the United States. Although Cryptosporidium can be removed by filtration, the most commonly used filtration methods cannot guarantee 100 percent removal. Our monitoring of source water and or finished water indicates the presence of these organisms. Unfortunately, current test methods do not enable us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of an infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals are able to overcome the disease within a few weeks. However, immuno-compromised people have more difficulty and are at greater risk of developing severe, life-threatening illness. Immuno-compromised individuals are encouraged to consult their doctor regarding appropriate precaution to take to prevent infection. Cryptosporidium must be ingested for it to cause disease, and it may be spread through means other than drinking water. We constantly monitor the water supply for various constituents. There is no federal regulation for radon levels in the drinking water. Exposure to air transmitted radon over a long period of time may cause adverse health effects.

## **RESULTS OF RADON MONITORING**

Radon is a radioactive gas which is naturally occurring in some ground water. It poses a lung cancer risk when the gas is released from your water into the air (as occurs during showering, bathing, or washing dishes or clothes) and a stomach cancer risk when you drink water containing radon. Radon gas released from drinking water is a relatively small part of the total radon in air. Other sources are radon gas from soil which enter homes through foundations, and radon inhaled directly while smoking cigarettes. Experts are not sure exactly what the cancer risk is from a given level of radon in your drinking water. If you are concerned about radon in your home, tests are available to determine the total exposure level. For additional information on how to have your home tested, contact the Project Environment Radon Hotline 1-800-458-0145.

Kaysville City routinely monitors for constituents in our drinking water in accordance with the Federal and Utah State laws. The following tables show the results of our monitoring for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2002. 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

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

**Nephelometric Turbidity Unit (NTU)**- nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5NTU 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)**- (mandatory language) A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

**Maximum contaminant Level(MCL)**- (mandatory language) 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)**- (mandatory language) 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.

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

**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.

### **SO WHAT'S IN MY WATER?**

THE TABLES ON THE FOLLOWING PAGES LIST ALL OF THE REGULATED AND UNREGULATED DRINKING WATER CONTAMINANTS THAT WE DETECTED DURING THE YEAR. Unregulated contaminant monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants. Some of our data, though representative, are more than one year old. Because the concentration of certain contaminants do not change frequently, the state allows less frequent monitoring. Note that the presence of contaminants in the water does not necessarily indicate that the water poses a health risk.

**TEST RESULTS**

This data is derived from samples collected from 2001 through 2007

**REGULATED INORGANIC CONTAMINANTS**

Contaminants	Units	Low	High	MCL	MCLG	Typical Source
1. Barium	ppm	0.10	0.9	2	2	Erosion of natural deposits; Discharge of drilling wastes;
2. Chromium - Total	ppb	ND	28.8	100	100	Industrial discharge
3. Copper	ppb	0.018	0.27	1.3	0	Corrosion of household plumbing systems, erosion of natural deposits; leaching from wood preservatives
4. Fluoride	ppm	0.1	0.1	4	4	Fluoridated water in distribution system: Erosion of Natural Deposits
5. Lead	ppb	0.001	0.002	0.015	0	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
6. Total Nitrate+Nitrite	ppm	0.1	1.4	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
7. Sodium	ppm	38.6	38.6	NA	NA	Erosion of natural deposits
8. Sulfate	ppm	43	48	1000	NA	Erosion of natural deposits
9. Total Dissolved Solids	ppm	238	324	2000	NA	Erosion of natural deposits

**TEST RESULTS**

This data is derived from samples collected in 2007

**REGULATED ORGANIC CONTAMINANTS**

Contaminants	Units	Low	High	MCL	MCLG	Typical Source
Total Trihalomethanes	ppb	0	39.4	80	NA	By-product of drinking water chlorination
Haloacetic Acids	ppb	16.2	31.6	60	NA	By-product of drinking water chlorination

**TEST RESULTS**

This data is derived from samples collected from 2001 through 2007

**UNREGULATED ORGANIC CONTAMINANTS**

Contaminant	Units	Low	High	MCL	MCLG	Typical Source
Dibromoacetic Acid	ppb	ND	5.1	NA	NA	By-product of drinking water chlorination (Haloacetic Acids)
Chloroform	ppb	ND	11.6	NA	NA	By-product of drinking water chlorination (Trihalomethanes)
Bromodichloromethane	ppb	ND	5.1	NA	NA	By-product of drinking water chlorination (Trihalomethanes)

Chlorodibromo-methane	ppb	0.6	3.8	NA	NA	By-product of drinking water chlorination (Trihalomethanes)
Bromoform	ppb	0.6	2.2	NA	NA	By-product of drinking water chlorination (Trihalomethanes)

Dichloroacetic Acid	ppb	1.2	13.3	NA	NA	By-product of drinking water chlorination ( Haloacetic Acids)
Trichloroacetic Acid	ppb	1.0	17.0	NA	NA	By-product of drinking water chlorination ( Haloacetic Acids)
Dibromochloro-methane	ppb	ND	1.1	NA	NA	By-product of drinking water chlorination

**TEST RESULTS**  
This data is derived from distribution locations sampled in 2007

**REGULATED MICROBIOLOGICAL CONTAMINANTS**

Contaminant	Percentage	MCL	MCLG	Typical Source
Total Coliform Bacteria	0.8%	5%	0	Naturally present in the environment

**TEST RESULTS**  
This data is derived from samples collected from 2001 through 2007

**REGULATED RADIOLOGIC CHEMICALS**

Contaminant	Units	Low	High	MCL	MCLG	Typical Source
Gross Alpha Particles	pCi/L	ND	2.95	15	0	Erosion of natural deposits

**TEST RESULTS**  
This data is derived from Kaysville City Water System sampled in 2003

**REGULATED RADIOLOGIC CHEMICALS**

Contaminant	Units	Low	High	MCL	MCLG	Typical Source
Asbestos	MFL	0	0.20	7	7	Decay of asbestos cement in water mains; erosion of natural deposits

We at Kaysville City 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 have any questions or concerns please feel free to call Jeff Brown 544-8112 between the hours of 7:00am to 3:30p.m Monday thru Friday.