

Evolution of Water



Jayson Barfknecht
Water Services
Director



Mark Jurica
Treatment &
Compliance Manager



Charles Rhodes
Production & Field
Operations Manager



Jennifer Rich
Water Services
Project Coordinator

Throughout the ages, man has searched for the perfect drinking water. The search is finally over; it was discovered right in our own backyard.

Bryan Water - The Clear Choice

2009 ANNUAL DRINKING WATER QUALITY REPORT - CONSUMER CONFIDENCE REPORT CITY OF BRYAN – 979.209.5900

TO ENSURE THE SAFEST TAP WATER, THE U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) PRESCRIBES SET STANDARDS REQUIRING UTILITIES TO MONITOR REGULARLY FOR SPECIFIC SUBSTANCES IN THE WATER THEY PRODUCE. AN INDEPENDENT LABORATORY CERTIFIED BY THE EPA AND THE STATE OF TEXAS PERFORMS TESTING AS REQUIRED. THESE PAGES LIST ALL OF THE FEDERALLY REGULATED OR MONITORED CONTAMINANTS WHICH HAVE BEEN FOUND IN YOUR DRINKING WATER. THE EPA REQUIRES WATER SYSTEMS TO TEST FOR UP TO 97 CONTAMINANTS.

WATER SOURCES:

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, AND IN SOME CASES, RADIOACTIVE MATERIAL, AND CAN PICK UP SUBSTANCES RESULTING FROM THE PRESENCE OF ANIMALS OR FROM HUMAN ACTIVITY. CONTAMINANTS THAT MAY BE PRESENT IN SOURCE WATER BEFORE TREATMENT INCLUDE: MICROBES, INORGANIC CONTAMINANTS, PESTICIDES, HERBICIDES, RADIOACTIVE CONTAMINANTS, AND ORGANIC CHEMICAL CONTAMINANTS.

ALL DRINKING WATER MAY CONTAIN CONTAMINANTS. WHEN DRINKING WATER MEETS FEDERAL STANDARDS THERE MAY NOT BE ANY HEALTH BASED BENEFITS TO PURCHASING BOTTLED WATER OR POINT OF USE DEVICES. 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 EPA'S SAFE WATER HOTLINE AT 1-800-426-4791.

SOURCE WATER ASSESSMENT:

OUR DRINKING WATER IS OBTAINED FROM GROUND WATER SOURCES. IT COMES FROM THE FOLLOWING LAKE/RIVER/RESERVOIR/AQUIFER: SIMSBORO AQUIFER. A SOURCE WATER SUSCEPTIBILITY ASSESSMENT FOR YOUR DRINKING WATER SOURCE(S) IS CURRENTLY BEING UPDATED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ). THIS INFORMATION DESCRIBES THE SUSCEPTIBILITY AND TYPES OF CONSTITUENTS THAT MAY COME IN CONTACT WITH YOUR DRINKING WATER SOURCE BASED ON HUMAN ACTIVITIES AND NATURAL CONDITIONS. THE INFORMATION CONTAINED IN THE ASSESSMENT WILL ALLOW US TO FOCUS OUR SOURCE WATER PROTECTION STRATEGIES. SOME OF THIS SOURCE WATER ASSESSMENT INFORMATION WILL BE AVAILABLE LATER THIS YEAR ON TEXAS DRINKING WATER WATCH AT [HTTP://DWW.TCEQ.STATE.TX.US/DWW/](http://dww.tceq.state.tx.us/DWW/). FOR MORE INFORMATION ON SOURCE WATER ASSESSMENTS AND PROTECTION EFFORTS AT OUR SYSTEM, CONTACT CHARLES RHODES @ 979.209.5900.

VIOLATION TYPE	HEALTH EFFECTS	DURATION	EXPLANATION	STEPS TO CORRECT
NONE	NONE	NONE	NONE	NONE

SCREENED AT THE PRODUCTION FACILITIES

YEAR	CONSTITUENT	MCL	DETECTED LEVEL	MCL GOAL	POSSIBLE SOURCES OF SUBSTANCES
2002	ARSENIC	10 PPB	< 2 PPB	0 PPB	EROSION OF NATURAL DEPOSITS; RUNOFF FROM ORCHARDS; RUNOFF FROM GLASS AND ELECTRONICS PRODUCTION WASTES.
2002	BARIUM	2 PPM	0.103 PPM	2 PPM	DISCHARGE OF DRILLING WASTE; DISCHARGE FROM METAL REFINERIES; EROSION OF NATURAL DEPOSITS.
2002	CHROMIUM	100 PPB	6.6 PPB	100 PPB	DISCHARGE FROM STEEL AND PULP MILLS; EROSION OF NATURAL DEPOSITS.
2008	FLUORIDE	4 PPM	0.36 PPM	4 PPM	EROSION OF NATURAL DEPOSITS; WATER ADDITIVE WHICH PROMOTES STRONG TEETH; DISCHARGE FROM FERTILIZER AND ALUMINUM FACTORIES.
2002	MERCURY (INORGANIC)	2 PPB	ND	2 PPB	EROSION OF NATURAL DEPOSITS; DISCHARGE FROM REFINERIES AND FACTORIES; RUNOFF FROM LANDFILLS; RUNOFF FROM CROPLAND.
2009	NITRATE (AS NITROGEN)	10 PPM	0.06 PPM	10 PPM	EROSION OF NATURAL DEPOSITS; RUNOFF FROM FERTILIZER USE; LEACHING FROM SEPTIC TANKS; SEWAGE.
2002	GROSS ALPHA	15 pCi/L	0.8 pCi/L	0 pCi/L	EROSION OF NATURAL DEPOSITS.

SCREENED IN THE DISTRIBUTION SYSTEM

YEAR	CONSTITUENT	MCL	DETECTED LEVEL	MCL GOAL	POSSIBLE SOURCES OF SUBSTANCES
2009	TOTAL COLIFORM*	> 5% OF SAMPLES	0%	0	NATURALLY PRESENT IN THE ENVIRONMENT.
2009	TOTAL TRIHALOMETHANES**	80 PPB	18.2 PPB	N/A	BYPRODUCT OF DRINKING WATER DISINFECTION.
2009	TOTAL HALOACETIC ACIDS***	60 PPB	1.9 PPB	N/A	BYPRODUCT OF DRINKING WATER DISINFECTION.

LEAD AND COPPER RESULTS

YEAR	CONSTITUENT	90TH PERCENTILE	SITES EXCEEDING ACTION LEVEL	MCL	MCL GOAL	POSSIBLE SOURCES OF SUBSTANCES
2009	LEAD	2.2 PPB	0	ACTION LEVEL = 15 PPB	0	CORROSION OF HOUSEHOLD PLUMBING SYSTEMS; EROSION OF NATURAL DEPOSITS.
2009	COPPER	0.13 PPM	0	ACTION LEVEL = 1.3 PPM	1.3 PPM	CORROSION OF HOUSEHOLD PLUMBING SYSTEMS; EROSION OF NATURAL DEPOSITS; LEACHING FROM WOOD PRESERVATIVES.

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. THIS WATER SUPPLY 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](http://www.epa.gov/safewater/lead).

MAXIMUM RESIDENTIAL DISINFECTANT LEVEL

YEAR	CONSTITUENT	ANNUAL AVG	HIGHEST AVG (QUARTERLY)	RANGE OF DETECTS (LOW-HIGH)	MRDL	MRDL	UNITS	SOURCE
2009	CHLORINE DISINFECTANT	1.94	2.11	0.70 – 3.10	4.0	<4.0	PPM	DISINFECTANT USED TO CONTROL MICROBES

SECONDARY CONSTITUENTS			
YEAR	CONSTITUENT	MCL	DETECTED LEVELS
2002	ALUMINUM	0.05 - 0.2 PPM	0.007 PPM
2008	BICARBONATE	NOT REGULATED	501 PPM
2002	CALCIUM	NOT REGULATED	3.2 PPM
2008	CARBONATE	NOT REGULATED	<1 PPM
2008	CHLORIDE	300 PPM	57 PPM
2002	COPPER	1 PPM	0.003 PPM
2002	HARDNESS AS Ca/MG	NOT REGULATED	11 PPM
2002	MAGNESIUM	NOT REGULATED	0.6 PPM
2002	MANGANESE	0.05 PPM	0.0028 PPM
2008	PH	>7.0	8.4
2002	SODIUM	NOT REGULATED	244 PPM
2008	SULFATE	300 PPM	3 PPM
2008	TOTAL ALKALINITY	NOT REGULATED	411 PPM
2008	DISSOLVED SOLIDS	1000 PPM	553 PPM
2002	ZINC	5 PPM	0.005 PPM

THE STATE ALLOWS MONITORING FOR SOME CONSTITUENTS LESS THAN ONCE A YEAR BECAUSE THE AMOUNT OF THESE CONSTITUENTS DOES NOT CHANGE FREQUENTLY. THE OFFICIAL INFORMATION PROVIDED IS THE MOST CURRENT DATA AVAILABLE THROUGH APPROVED LABORATORIES.

* A TOTAL OF 900 WATER SAMPLES WERE COLLECTED TO BE TESTED FOR TOTAL COLIFORM BACTERIA. THERE WERE NO POSITIVE SAMPLES FOR COLIFORM BACTERIA.

UNREGULATED CONTAMINANT MONITORING RULE 2 (UCMR2)	
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. ANY UNREGULATED CONTAMINANTS ARE REPORTED IN THE FOLLOWING TABLES. FOR ADDITIONAL INFORMATION AND DATA VISIT HTTP://WWW.EPA.GOV/SAFEWATER/UCMR/UCMR2/INDEX.HTML , OR CALL THE SAFE DRINKING WATER HOTLINE AT (800) 426-4791.	

YEAR	CONSTITUENT	AVERAGE	RANGE OF DETECTS (LOW-HIGH)	PQL	MCL	UNITS	SOURCE
2009	DIMETHOATE	ND	ND	0.69	O	PPB	SURFACE RUNOFF; DISCHARGE FROM FACTORIES; RUNOFF FROM LANDFILLS
2009	TERBUFOS SULFONE	ND	ND	0.39	O	PPB	SURFACE RUNOFF; DISCHARGE FROM FACTORIES; RUNOFF FROM LANDFILLS
2009	2,2',4,4'-TETRABROMODIPHENYL ETHER (BDE-47)	ND	ND	0.30	O	PPB	SURFACE RUNOFF; DISCHARGE FROM FACTORIES; RUNOFF FROM LANDFILLS
2009	2,2',4,4',6-PENTABROMODIPHENYL ETHER (BDE-100)	ND	ND	0.49	O	PPB	SURFACE RUNOFF; DISCHARGE FROM FACTORIES; RUNOFF FROM LANDFILLS
2009	2,2',4,4',5-PENTABROMODIPHENYL ETHER (BDE-99)	ND	ND	0.89	O	PPB	SURFACE RUNOFF; DISCHARGE FROM FACTORIES; RUNOFF FROM LANDFILLS
2009	2,2',4,4',5,5'-HEXABROMODIPHENYL (BDE-153)	ND	ND	0.69	O	PPB	SURFACE RUNOFF; DISCHARGE FROM FACTORIES; RUNOFF FROM LANDFILLS
2009	2,2',4,4',5,5'-HEXABROMODIPHENYL ETHER (HBB-245)	ND	ND	0.79	O	PPB	SURFACE RUNOFF; DISCHARGE FROM FACTORIES; RUNOFF FROM LANDFILLS

EXPLOSIVES IN DRINKING WATER

YEAR	CONSTITUENT	AVERAGE	RANGE OF DETECTS (LOW-HIGH)	PQL	MCL	UNITS	SOURCE
2009	1,3-DINITROBENZENE	ND	ND	0.8	O	PPB	SURFACE RUNOFF; DISCHARGE FROM FACTORIES; RUNOFF FROM LANDFILLS
2009	HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE (RDX)	ND	ND	1.0	O	PPB	SURFACE RUNOFF; DISCHARGE FROM FACTORIES; RUNOFF FROM LANDFILLS
2009	2,4,6-TRINITROTOLUENE (TNT)	ND	ND	0.8	O	PPB	SURFACE RUNOFF; DISCHARGE FROM FACTORIES; RUNOFF FROM LANDFILLS

DEFINITIONS

MAXIMUM CONTAMINANT LEVEL (MCL)

THE HIGHEST PERMISSIBLE LEVEL OF A CONTAMINANT 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 HEALTH RISK. MCLGS ALLOW FOR A MARGIN OF SAFETY.

MAXIMUM RESIDUAL DISINFECTION LEVEL (MRDL)

THE HIGHEST LEVEL OF DISINFECTION ALLOWED IN DRINKING WATER. THERE IS CONVINCING EVIDENCE THAT ADDITION OF A DISINFECTANT IS NECESSARY FOR CONTROL OF MICROBIAL CONTAMINANTS.

MAXIMUM RESIDUAL DISINFECTION 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 CONTAMINATION.

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.

PRACTICAL QUANTITATION LIMIT (PQL)

CONSIDERED THE LOWEST CONCENTRATION OF A CONTAMINANT THAT CAN BE ACCURATELY MEASURED.

ABBREVIATIONS

NTU - NEPHELOMETRIC TURBIDITY UNITS

MFL - MILLION FIBERS PER LITER (A MEASURE OF ASBESTOS)

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)

PPT - PARTS PER TRILLION, OR NANOGRAMS PER LITER

PPQ - PARTS PER QUADRILLION, OR PICOGRAMS PER LITER

ND - NON DETECTED

SECONDARY CONSTITUENTS

MANY CONSTITUENTS (SUCH AS CALCIUM, SODIUM, OR IRON) WHICH ARE OFTEN FOUND IN DRINKING WATER, CAN CAUSE TASTE, COLOR, AND ODOR PROBLEMS. THE TASTE AND ODOR CONSTITUENTS ARE CALLED SECONDARY CONSTITUENTS AND ARE REGULATED BY THE STATE OF TEXAS, NOT THE EPA. THESE CONSTITUENTS ARE NOT CAUSES FOR HEALTH CONCERNS. THEREFORE, SECONDARIES ARE NOT REQUIRED TO BE REPORTED IN THE DOCUMENT BUT THEY MAY GREATLY AFFECT THE APPEARANCE AND TASTE OF YOUR WATER.

** TOTAL TRIHALOMETHANES ARE REGULATED AS A GROUP WHICH CONTAINS: BROMOFORM (9.2 PPB), CHLOROFORM (<1.0 PPB), BROMODICHLOROMETHANE (2.3 PPB), AND DIBROMOCHLOROMETHANE (6.5 PPB).

*** TOTAL HALOACETIC ACIDS ARE REGULATED AS A GROUP WHICH CONTAINS: MONOCHLOROACETIC ACID (<2.0 PPB), DICHLOROACETIC ACID (<1.0 PPB), TRICHLOROACETIC ACID (<1.0 PPB), MONOBROMOACETIC ACID (<1.0 PPB), AND DIBROMOACETIC ACID (1.9 PPB). MONITORED COMPOUNDS INCLUDE BROMOCHLOROACETIC ACID (<1.0 PPB) AND DALAPON (<1.0 PPB).

PUBLIC PARTICIPATION OPPORTUNITIES ARE NOTED THROUGHOUT THE CALENDAR; TO LEARN MORE ABOUT FUTURE PUBLIC MEETINGS (CONCERNING YOUR DRINKING WATER), OR TO REQUEST TO SCHEDULE ONE, PLEASE CALL US AT 979.209.5900.

EN ESPAÑOL
ESTE INFORME INCLUYE INFORMACIÓN IMPORTANTE SOBRE EL AGUA POTABLE. SI TIENE PREGUNTAS O COMENTARIOS SOBRE ESE INFORME EN ESPAÑOL, FAVOR DE LLAMAR AL TEL. (979) 209-5900 - PARA HABLAR CON UNA PERSONA BILINGÜE EN ESPAÑOL.

What's hiding in this water?

Charles Rhodes
Production & Field
Operations Manager

Jennifer Rich
Water Services
Project Coordinator

Stanley McMurray
WWT Plant Operator

Mark Jurica
Treatment &
Compliance Manager

Nicholas Koski
Environmental
Compliance Officer

July

Sun	Mon	Tue	Wed	Thur	Fri	Sat
				1	2	3
4 Independence Day	5	6	7	8	9	10
11	12	13 Council Meeting	14	15	16	17
18	19	20	21	22	23	24
25	26	27 Council Meeting	28	29	30	31

Water makes up about 70% of the human body, which means drinking water is essential to the survival of humans. Faced with limited options, ancient civilizations were forced to rely on any available source of drinking water. Many of those sources, such as lakes and streams, are contaminated with *Cryptosporidium* and other microbial contaminants. 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. The EPA/Centers for Disease Control and Prevention (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 (1-800-426-4791). More information on *Cryptosporidium* can be found by visiting the EPA website at www.epa.gov/safewater. Remember, no matter how pristine water may appear, it should not be consumed without proper treatment.

Should you drink this?



Jennifer Rich
Water Services
Project Coordinator

Charles Rhodes
Production & Field
Operations Manager

Mark Bower
WD/WWC Maintenance
Crew Leader

J.T. Thompson
WD/WWC Maintenance
Operator

Lamar Cole
Customer Service
Technician

August

Sun	Mon	Tue	Wed	Thur	Fri	Sat
1	2	3	4	5	6	7
8	9	10 Council Meeting	11	12	13	14
15	16	17	18	19	20	21
22	23	24 Council Meeting	25	26	27	28
29	30	31				

Since water dissolves more things than any other substance, Mother Nature uses rain as a means to clean the sky, as well as rivers, lakes, and streams. In fact, water is commonly referred to as the "universal solvent" and while this property of water is critical in helping our bodies remove toxins we routinely encounter, it can also serve to pollute rainwater as it falls from the clouds to the ground. The question is often asked: "Is rainwater safe to drink?" The answer is yes, with proper collection and treatment. Unfortunately, since you can't control when it rains (or how much), rainwater is not a reliable source for on-demand drinking water needs. Also, harvesting rainwater as a main source of drinking water is not practical because the amount of rain needed and the level of treatment required negates any perceived benefit. However, harvested rainwater does not need to be treated if it is used directly on small gardens and potted plants.

Will this quench your thirst?



Victor Harris
WWT Plant Supervisor

Mark Bower
WD/WWC Maintenance
Crew Leader

Lamar Cole
Customer Service
Technician

Pablo Rodriguez
WD/WWC Maintenance
Worker

Carla Zgabay
Water Services
Administration

September

Sun	Mon	Tue	Wed	Thur	Fri	Sat
			1	2	3	4
5	6 Labor Day	7	8	9	10	11
12 Grandparents Day	13	14 Council Meeting	15	16	17	18
19	20	21	22	23 Autumn Begins	24	25
26	27	28 Council Meeting	29	30		

Unlike rain, snow is less likely to become contaminated by surface runoff, but it still encounters and absorbs pollutants from the atmosphere. In addition to likely contamination, there are other things to consider before eating snow to combat dehydration. Ice cold water cools your core body temperature down very quickly and draws calories from your body to warm the cold water. By eating snow directly, you waste precious calories and body heat while the amount of water you gain is minimal. In a survival situation, water is one of your most urgent needs, but so is avoiding hypothermia. Therefore, a fire should be used to melt snow and ice for drinking water purposes. Plus, boiling water remains the most foolproof and effective treatment method to use in a survival situation. As a reminder, be sure to avoid dirty and/or yellow snow.

Is it hot enough yet?

John Zgabay
WD/WWC Maintenance
Operator

Carla Zgabay
Water Services
Administration

Larry Janac
Water Meter
Foreman

J.T. Thompson
WD/WWC Maintenance
Operator

Ashley Limoges
GIS Technician

Daniel Barnett
WD/WWC Maintenance
Crew Leader

October

Sun	Mon	Tue	Wed	Thur	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11 Columbus Day	12 Council Meeting	13	14	15	16
17	18	19	20	21	22	23
24 31 Halloween	25	26 Council Meeting	27	28	29	30

Residents may be asked to boil their water before consumption if a failure occurs in a production facility's disinfection process or a contaminant enters the water distribution system. This is because boiling is the surest method to make water safe to drink and kills most disease-causing microorganisms like *Giardia lamblia* and *Cryptosporidium*, which are frequently found in rivers and lakes. It should be noted that these disease-causing organisms are less likely to occur in well water, as long as it has not been affected by flood waters. To ensure sterilization, boil filtered and settled water vigorously for one minute (at altitudes above one mile, boil for three minutes). To improve the flat taste of boiled water, aerate it by pouring it back and forth from one container to another and allow it to stand for a few hours, or add a pinch of salt for each quart or liter of water boiled. When boiling water, exercise extreme care to avoid contact burns and keep in mind that the water gets hot long before it boils.

How deep will you go?



Mark Jurica
Treatment &
Compliance Manager

Carla Zgabay
Water Services
Administration

Nicholas Koski
Environmental
Compliance Officer

Jennifer Lopez
Water Services
Administration

November

Sun	Mon	Tue	Wed	Thur	Fri	Sat
	1 All Saints' Day	2	3	4	5	6
7 Daylight Savings Ends	8	9 Council Meeting	10	11 Veteran's Day	12	13
14	15	16	17	18	19	20
21	22	23 Council Meeting	24	25 Thanksgiving	26	27
28	29	30				

Accessing groundwater became vital as human populations migrated away from traditional water sources, such as rivers and streams. A common method of obtaining groundwater, which is still in use today in some parts of the world, is by means of hand dug wells. Just as the name implies, hand dug wells are dug by hand, which makes them relatively inexpensive to maintain. In addition, the volume of the water in the well below the standing water table acts as a reservoir, which can meet demands on it during the day and replenish itself during periods with no water withdrawal. However, there are drawbacks to using this type of well. Hand dug wells are restricted to areas with certain soil types, such as clays, sands, gravels and mixed soils where only small boulders are present. Also, they are not well protected from outside contamination and are typically under the influence of surface water. With the high risk of contamination, you should not consume water from a hand dug well without adequate pretreatment.

How does this work?

Bridget Johnston
Warehouse
Storekeeper

Jimmy Holliday
Water Quality
Technician

Mark Jurica
Treatment &
Compliance Manager

Scott Brooks
Warehouse
Supervisor



December

Sun	Mon	Tue	Wed	Thur	Fri	Sat
			1 Hanukkah Begins	2	3	4
5	6	7	8	9	10	11
12	13	14 Council Meeting	15	16	17	18
19	20	21 Winter Begins	22	23	24 Christmas Eve	25 Christmas Day
26	27	28 Council Meeting	29	30	31 New Year's Eve	

A hand-powered water pump over a water well was once commonly used worldwide to extract water from the ground. Although this was an evolutionary step up from hand dug wells, water from these types of pumps is still prone to contamination. Since the water is drawn directly from the soil and does not undergo filtration, it is susceptible to microbial contaminants which can cause gastrointestinal related diseases. However, hand operated village pumps are still considered the most sustainable, low-cost option for a safe water supply in resource poor settings, such as rural areas of developing countries. Hand pumps provide access to deeper groundwater that is often not polluted and improves the safety of the well by protecting the water source from contaminated buckets.

Are we there yet?

John Zgabay
WD/WWC Maintenance
Operator

Jeremy Rebstock
WD/WWC Maintenance
Worker

Larry Janac
Water Meter
Foreman

Daniel Barnett
WD/WWC Maintenance
Crew Leader

Bobby Mitchell
WD/WWC Maintenance
Operator

January

Sun	Mon	Tue	Wed	Thur	Fri	Sat
						1 New Year's Day
2	3	4	5	6	7	8
9	10	11 Council Meeting	12	13	14	15
16	17 Martin Luther King Jr. Day	18	19	20	21	22
23 30	24 31	25 Council Meeting	26	27	28	29

In developed countries with approved sources of drinking water, water well development has advanced beyond hand dug wells and hand-powered pumps. Some of the current water well development requirements include sanitary control easements, approved drilling methods, casing requirements, broad spectrum testing, disinfection, sealing blocks, screened vents, etc. These guidelines are in place to protect the citizens, as well as the water source. The City of Bryan currently has twelve wells developed to these standards to help meet current and future water needs of our community. Once the water is pumped from the wells, it is cooled and then disinfected with chlorine to guard against biological contamination. With production capabilities ranging from 600 to 3,400 gallons per minute, these wells are unlike anything early man ever encountered.

What's the price for convenience?



Jeremy Rebstock
WD/WNC Maintenance
Worker



Heather Gaston
Public Works
Assistant



Scott Brooks
Warehouse
Supervisor

February

Sun

Mon

Tue

Wed

Thur

Fri

Sat

		1	2 Groundhog Day	3	4	5
6	7	8 Council meeting	9	10	11	12
13	14 Valentine's Day	15	16	17	18	19
20	21 Presidents Day	22 Council meeting	23	24	25	26
27	28					

With the advancement of water systems, complex infrastructure now delivers high-quality drinking water from the source directly to homes and businesses. Even with this advancement, we are always looking for more convenience. Can you imagine early man's response to a machine that dispenses portable containers full of drinking water? They probably would have been quite pleased with the development of such technology. However, this convenience does come at a price. As an example, if you pay \$1.00 for a 20 ounce bottle of water, you would spend \$6,400 for 1,000 gallons. As you can see, that is a whole lot of rocks! To put it in perspective, the City of Bryan's residential water rate is \$2.76 per 1,000 gallons and it is delivered directly to your home.

Is there more to it than this?



Melissa Gill
Public Works
Assistant

Scott Brooks
Warehouse
Supervisor

Jeremy Rebstock
WD/WWC Maintenance
Worker

Mark Bower
WD/WWC Maintenance
Crew Leader

March

Sun	Mon	Tue	Wed	Thur	Fri	Sat
		1	2	3	4	5
6	7	8 Council Meeting	9 Ash Wednesday	10	11	12
13 Daylight Savings Begins	14	15	16	17 St. Patrick's Day	18	19
20 Spring Begins	21	22 Council Meeting	23	24	25	26
27	28	29	30	31		

The beneficial uses of water extend beyond simply drinking water for survival. One such use is the protection of life and property. From the Roman bucket brigades of approximately 6 AD to the sophisticated fire trucks of the 21st century, this process has continued to evolve. To assist with this evolution, the City of Bryan currently maintains 2,235 hydrants. Part of the maintenance of all these hydrants includes annual flow-testing, which is a vital part of the process in determining the capacity of each hydrant. The hydrant is then assigned and painted a particular color, based on the amount of flow recorded. The flow information, along with the GPS location of each hydrant, is entered into the City's GIS mapping system. The City of Bryan Fire Department can access this data en route to a fire and know where the closest hydrant is before arriving on the scene. In these emergency situations, every second counts and knowing the closest hydrant location is essential.

Where would we be?



Karen Orban
Water Services
Administration

Pablo Rodriguez
WD/WWC Maintenance
Worker

Ashley Limoges
GIS Technician

April

Sun	Mon	Tue	Wed	Thur	Fri	Sat
					1 April Fool's	2
3	4	5	6	7	8	9
10	11	12 Council Meeting	13	14	15	16
17	18	19	20	21	22 Good Friday Earth Day	23
24 Easter	25	26 Council Meeting	27	28	29	30

Another beneficial use of water revolves around washing clothes. As mentioned previously, water is known as the universal solvent so it stands to reason that utilizing those properties for cleaning purposes is a natural progression. It is believed that early man cleaned clothes by pounding them on rocks or rubbing them with abrasive sands and then washed the dirt away in local streams. The earliest known washing "machine" is believed to have been invented sometime in the 18th century and the first electric-powered washing machine was introduced in 1908. As technology and convenience have continued to evolve, more sophisticated front loading units are readily available today. These units use less water, less energy, and less detergent than conventional top loading washing machines. Front loading units also remove more water from clothes during the spin cycle, which translates into shorter drying times.

Having fun yet?

Bobby Mitchell
WD/WWC Maintenance
Operator

Daniel Barnett
WD/WWC Maintenance
Crew Leader

James Karr
Water Quality
Technician

Bridget Johnston
Warehouse
Storekeeper

Howard Hart
Safety
Officer

Pablo Rodriguez
WD/WWC Maintenance
Worker

May

Sun	Mon	Tue	Wed	Thur	Fri	Sat
1	2	3	4	5 Cinco De Mayo	6	7
8 Mother's Day	9	10 Council Meeting	11	12	13	14
15	16	17	18	19	20	21 Armed Forces Day
22	23	24 Council Meeting	25	26	27	28
29	30 Memorial Day	31				

Water can also be used for recreational purposes. Although man has long utilized oceans, lakes, rivers, and streams for recreational use, the options are constantly expanding. Water skiing, water theme parks, and aquatic centers are only a few examples of popular entertainment activities available today. Several options are available within the City of Bryan to help meet the recreational water needs of our residents. There are three swimming pools, including a heated pool that is open year-round, three splash pads (one pictured above) and Lake Bryan, which provides several aquatic activities. Playing in water is a great way to cool off during the hot summer months while also supplying timeless family-fun.

Bryan Water - The Clear Choice



Jason Bienski
Bryan Mayor

Tasha Bienski
First Lady of Bryan

June

Sun	Mon	Tue	Wed	Thur	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14 Council Meeting	15	16	17 Texas Reds Festival	18
19 Father's Day Juneteenth	20	21 Summer Begins	22	23	24	25
26	27	28 Council Meeting	29	30		

The City of Bryan hopes you enjoyed our 2009 Drinking Water Quality Report and found the 2010-2011 calendar valuable. Although the annual water quality report is required by the Texas Commission on Environmental Quality, the format for presenting the information is determined by the City. We believe information shared in an entertaining format is more likely to be used and appreciated. This year's theme is the "Evolution of Water" which highlights some of the many changes that have occurred over time in regards to drinking water. Although we strive to create a humorous theme with the pictures, the message delivered is important to us all. This is the sixth year we've presented the report as a calendar, and it continues to receive national attention. Again, we hope you enjoyed and learned from the calendar, and we appreciate those who help make Bryan home of the Good Life, Texas Style.

Jason P. Bienski
Bryan Mayor

CITY OF BRYAN

The Good Life, Texas Style.

P.O. Box 1000
Bryan, Texas 77805
979.209.5900
www.bryantx.gov

Featured Staff



JAYSON BARFKNECHT
WATER SERVICES
DIRECTOR



CHARLES RHODES
PRODUCTION & FIELD
OPERATIONS MANAGER



JENNIFER RICH
WATER SERVICES
PROJECT COORDINATOR



MARK JURICA
TREATMENT &
COMPLIANCE MANAGER



MARK BOWER
WDMWMC MAINTENANCE
CREW LEADER



KAREN ORBAN
WATER SERVICES
ADMINISTRATION



J.T. THOMPSON
WDMWMC MAINTENANCE
OPERATOR



JIMMY HOLLIDAY
WATER QUALITY
TECHNICIAN



BOBBY MITCHELL
PUBLIC WORKS
WDMWMC MAINTENANCE
OPERATOR



JENNIFER LOPEZ
WATER SERVICES
ADMINISTRATION



JOHN ZGABAY
WDMWMC MAINTENANCE
OPERATOR



JEREMY REBSTOCK
WDMWMC MAINTENANCE
WORKER



LAMAR COLE
WAREHOUSE
TECHNICIAN



LARRY JANAC
WATER METER
FOREMAN



STANLEY MCMURRAY
WWT PLANT
OPERATOR



SCOTT BROOKS
WAREHOUSE
SUPERVISOR



HOWARD HART
SAFETY OFFICER



MELISSA GILL
PUBLIC WORKS
ASSISTANT



VICTOR HARRIS
WWT PLANT SUPERVISOR



ASHLEY LIMOGES
GIS TECHNICIAN



PABLO RODRIGUEZ
WDMWMC MAINTENANCE
WORKER



BRIDGET JOHNSTON
WAREHOUSE
STOREKEEPER



JAMES KARR
WATER QUALITY
TECHNICIAN



CARLA ZGABAY
WATER SERVICES
ADMINISTRATION



NICHOLAS KOSKI
ENVIRONMENTAL
COMPLIANCE OFFICER



DANIEL BARNETT
WDMWMC MAINTENANCE
CREW LEADER



HEATHER GASTON
PUBLIC WORKS
ASSISTANT

Water Services Department

1111 Waco Street Bryan, TX 77803
 PH 979.209.5900 Fax 979.209.5959
publicworksweb@bryantx.gov

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