City of Galveston

P. O. Box 779 / Galveston, Texas 77553

Dear Galveston Municipal Utilities Customer:

This document represents the annual water quality report for the City of Galveston's Water System. All of us work every day to make sure that you are getting the quality system that you deserve.

We receive our water from the Thomas Mackey Water Treatment Plant, which is capable of supplying the City with almost 21 million gallons of water per day. In addition, we have begun the process of a study that will lead to the expansion of the City's share of that plant to over 26 million gallons of water per day by 2011. In addition, the City has begun a study that will strengthen our access to fresh water during emergency situations such as hurricanes, and will make certain that we are able to serve all customers during peak weekends such as Memorial Day, July 4th and Labor Day.

Construction is scheduled to begin in 2006 on a replacement for the 30th Street Pump Station behind Central Middle School. The existing pump station is over 100 years old and provides the pressure to all who live between 45th Street and the East End. Construction for a second 12-inch Water Line on FM 3005 from Jamaica Beach to the San Luis Pass Water Tower is scheduled to begin in the fall of 2005 and be completed prior to Memorial Day 2006. Construction of a new water tower and pump station at Jamaica Beach is scheduled to begin in 2006.

All of these projects are necessary to continue to expand our system and to recapitalize the existing system so that we may provide you with the very best quality water at the best possible pressure and flow. Continuing to serve your water needs is our primary duty, and my staff and I take this duty very seriously. And we do this with water rates that are below the state average. Please send your comments to the return address on this report or to publicworks@cityofgalveston.org. I will be pleased to receive them.

Sincerely,

Brandon E. Wade, MPA, PE
Director of Public Works and Municipal Utilities

Dept. of Public Works
City of Galveston
P.O. Box 779
Galveston, TX 77553-0779

City of Galveston
Water Quality Report 2005
For the Year Ending 12/31/04

City of Galveston
2004 Drinking Water Quality Report

City of Galveston Municipal Utilities Department Customer Service (409) 797-3550 Main Office (409) 797-3630

The Texas Commission on Environmental Quality (TCEQ) regulates our Drinking Water and they have assessed our system and determined that our water is safe to drink. The analysis was made using the data in the attached tables. Since your water meets federal standards, there may not be any health-based benefits to purchasing bottled water or point of use devices.

Providing safe and reliable drinking water is the highest priority for the City of Galveston Municipal Utilities Department. Our employees take pride in producing and delivering water to your tap that meets or is better than state and federal standards require.

This brochure is a summary of the quality of water provided to our customers. The information in this report is based on tests conducted during the past 5 years.

It is important to us that you have information about your drinking water, so you can have confidence in the product we deliver to you. Inside you will find a list of what is in the water and at what levels. There is also information on what is being done to keep your drinking water among the safest in the world.

The City of Galveston's drinking water meets or exceeds all Texas Commission on Environmental Quality and U.S. Environmental Protection Agency requirements.

This brochure is in compliance with Federal Regulations, Subpart O, Consumer Confidence Reporting, Chapter 141. The regulation requires all public water systems to deliver to its customer's drinking water quality standards by July 1, 2005, and yearly thereafter by July 1st.

We Welcome Your Comments: There are many opportunities available to learn more about the City of Galveston's Municipal Utilities Department and water quality. For inquiries, questions or concerns about water quality, public participation, policy decisions or to request a speaker for your group, call (409) 797-3630.

The Municipal Utilities Department is part of the city government. All legislative, policy, and budgetary decisions for the department are made by the City Council. City Council meets on the second and fourth Thursday of every month at 5:30 p.m. at 823 Rosenberg.

Internet access to the City of Galveston is: http://www.cityofgalveston.org

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 devises.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects may be obtained by calling EPA's Safe Drinking Water Hotline (1-800-426-4791).

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 concern. Therefore, secondaries are not required to be reported in this document but they may greatly affect the appearance and taste of your water.

United States Environmental Protection Agency
http://www.epa.gov/safewater

Texas Department of Health
http://www.tdh.texas.gov

En Espanol: Este reporte incluye informacion importante sobre el aqua para tomar. Si tiene preguntas o discusiones sobres este reporte en espanol, favor de llamar al tel. (409) 797-3630 par hablar con una persona bilingue en Espanol.

Where do we get our Water?

In September of 2001, the City of Galveston started to receive its water supply from the Gulf Coast Water Authority's Thomas A. Mackey Water Treatment Plant in Texas City. The Gulf Coast Water Authority (GCWA) owns 212 million gallons per day in water rights from the Brazos River and provides water for agriculture, industry and municipal use. All water travels through 150 miles of canals stretching from the Brazos River, across Fort Bend, Brazoria and Galveston Counties to the GCWA's raw water reservoir located near Highway 146 in Texas City.

The Thomas A. Mackey Water Treatment Plant currently serves the communities of Dickinson, Texas City, Kemah, La Marque, Bayview, San Leon and Bacliff. The Gulf Coast Water Authority has expanded their water treatment plant to a capacity of 50 million gallons per day to serve theses mainland communities and the City of Galveston. Public tours of the Mackey Water Treatment Plant are offered Monday thru Friday. For scheduling, please call (409) 948-6415.

The City of Galveston may supplement the surface water supply with well water from the Hitchcock, Santa Fe & Dickinson area. The Houston-Galveston Coastal Subsidence District allocates 540 million gallons per year of well water to the City of Galveston. The well water is used primarily during the summer months.

The TCEQ has completed a Source Water Susceptibility for all drinking water systems that own their sources. This report describes the susceptibility and types of constituents that may come into contact with the drinking water source based on human activities and natural conditions. The system(s) from which we purchase our water received the assessment report. For more information on source water assessments and protection efforts at our system contact the Gulf Coast Water Authority at 409-948-6415.

What's in the Water?

The water provided to your home travels over the surface of the land through streams, rivers and canals. This water may dissolve naturally occurring minerals and, in some cases, radioactive materials and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be found in untreated water include: microbial contaminants, such as viruses and bacteria; inorganic contaminants such as salts and metals; pesticides and herbicides; organic chemical contaminants from industrial processes and petroleum use; and radioactive contaminants.

In order to ensure that tap water is safe to drink, the United States Environmental Protection Agency and the Texas Commission on Environmental Quality establish regulations that limit the amount of certain contaminants in water provided by public water systems. The process of establishing contaminant levels includes scientific research of water quality issues conducted worldwide.

Special Information for the Elderly, Infants, Cancer Patients, People with HIV/Aids or other Immune Problems:

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/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 (800 – 426 – 4791).

UNDERSTANDING THE CHARTS

The following list explains the terms used in the charts:

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 Contaminant Level – MCL - The highest permissible 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.
Treatment Technique – A required process intended to reduce the level of a contaminant in drinking water.
Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
Turbidity - A measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.
NTU – Nepholometric Turbidity Units - This is the unit used to measure water turbidity.
MFL - Million fibers per liter - A measure of asbestos.
pCi/L - Picocuries per liter - A measurement of radioactivity in water.
ppm - Parts per million - One part per million, or milligrams per liter (mg/l).
ppb - Parts per billion - One part per billion, or micrograms per liter.
ppt - Parts per trillion - One part per trillion, or nanograms per liter.
ppq - Parts per quadrillion - One part per quadrillion, or picograms per liter.

Inorganic Contaminants

Year (Range)		Contaminant	Average Level	Minimum Level	Maximum Level	MCL	MCLG	Unit of Measure	Source of Contaminant
1999	2004	Arsenic 1.874 0 ppb 17.9 *	* *These arsenic values are effective January 23, 2006. Until then, the MCL is 50 ppb and there is currently no MCLG.*			*10	0		Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
1999	2004	Barium	0.164	0.0439	0.419	2	2	ppm	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
1999	2004	Chromium	0.105	0	10	100	100	ppb	Discharge from steel and pulp mills; erosion of natural deposits.
1999	2004	Fluoride	0.257	0.1	1	4	4	ppm	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
1999	2004	Nitrate	0.442	0	0.49	10	10	ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
1999	2004	Nitrite	0.004	0	0.03	1	1	ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
1999	2004	Selenium	2.903	0	10.9	50	50	ppb	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
2002	2002	Uranium	0.729	0	0	30	0	ppb	Erosion of natural deposits.
2002	2002	Combined Radium 226 & 228	0.405	0	0	5	0	pCi/L	Erosion of natural deposits.
2002	2002	Gross beta emitters	3.475	3.2	3.2	50	0	pCi/L	Decay of natural and man-made deposits.
2002	2002	Gross alpha	2.689	0	0	15	0	pCi/L	Erosion of natural deposits.

Organic Contaminants

Year (Range)		Contaminant	Highest Average	Minimum Level	Maximum Level	MCL	MCLG	Unit of Measure	Source of Contaminant
2004	2004	Atrazine	0.290	0	0.28	3	3	ppb	Runoff from herbicide used on row crops.
2004	2004	Xylenes	0.012	0	0.0133	10	10	ppm	Discharge from petroleum factories; discharge from chemical factories.
2004	2004	Benzene	0.690	0	0.69	5	0	ppb	Discharge from factories; leaching from gas storage tanks and landfills.
2004	2004	Toluene	0.012	0	0.012	1	1	ppm	Discharge from petroleum factories.

Disinfection Byproducts

Year (Range)		Contaminant	Average Level	Minimum Level	Maximum Level	MCL	Unit of Measure	Source of Contaminant
2003	2003	Total Trihalomethanes	60.500	54	65.6	80	ppb	Byproduct of drinking water disinfection.

Availability of Unregulated Contaminant Monitoring Rule Data (UCMR)

We participated in gathering data under the UCMR in order to assist EPA in determining the occurrence of possible drinking water contaminants. If any unregulated contaminants were detected, they are shown in the tables elsewhere in this report. This data may also be found on EPA's web site at http://www.epa.gov/safewater/data/ncod.html, or you can call the Safe Drinking Water Hotline at 1-800-426-4791.

Unregulated Contaminants

Year (Range)		Contaminant	Average Level	Minimum Level	Maximum Level	Unit of Measure	Source of Contaminant
2004	2004	Chloroform	3.607	0	51.04	ppb	Byproduct of drinking water disinfection.
2002	2002	Bromoform	1.307	0	3.3	ppb	Byproduct of drinking water disinfection.
2002	2002	Bromodichloromethane	3.456	0	9.2	ppb	Byproduct of drinking water disinfection.
2002	2002	Dibromochloromethane	4.006	0	11	ppb	Byproduct of drinking water disinfection.

Lead and Copper

Year (Range)		Contaminant	The 90th Percentile	Number of Sites Exceeding Action Level	Action Level	Unit of Measure	Source of Contaminant
2002	2002	Lead	1.7000	0	15	ppb	Corrosion of household plumbing systems; erosion of natural deposits.
2002	2002	Copper	0.0700	0	1.3	ppm	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.

Turbidity

Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

Year		Contaminant	Highest Single Measurement	Lowest Monthly % of Samples Meeting Limits	Turbidity Limits	Unit of Measure	Source of Contaminant
2004	2004	Turbidity	0.33	99.00	0.3	NTU	Soil runoff.

Total Organic Carbon (Inactivation ratio must be greater than 1)

Total Organic Carbon Removal at GCWA Treatment Plant Point of Entry						
Date	Raw Water (mg/L)	Alkalinity (mg/L)	Point of Entry (mg/L)	% of Removal	TCEQ	Ratio
1/15/2004	5.56	139	3.33	40.11	25.00	1.60
2/11/2004	5.95	122	3.42	42.52	25.00	1.70
3/17/2004	6.30	114	4.07	35.40	35.00	1.01
4/20/2004	5.65	132	3.72	34.16	25.00	1.37
5/19/2004	6.19	123	3.49	43.62	25.00	1.74
6/15/2004	5.34	123	3.77	29.40	25.00	1.18
7/13/2004	5.99	112	3.67	38.73	35.00	1.11
8/11/2004	5.37	139	3.17	40.97	25.00	1.64
9/14/2004	3.11	143	2.19	29.58	25.00	1.18
10/21/2004	4.14	146	2.51	39.37	25.00	1.57
11/19/2004	4.10	130	2.77	32.44	25.00	1.30
12/19/2004	4.36	119	2.67	38.76	35.00	1.11
Average:	5.17		3.23			
Maximum:	6.30		4.07			
Minimum:	3.11		2.19			

COLIFORMS

What are coliforms?

Total coliform bacteria are used as indicators of microbial contamination of drinking water because testing for them is easy. While not disease-causing organisms themselves, they are often found in association with other microbes that are capable of causing disease. Coliform bacteria are more hardy than many disease-causing organisms; therefore, their absence from water is a good indication that the water is microbiologically safe for human consumption. Fecal coliform bacteria and, in particular, E. coli, are members of the coliform bacteria group originating in the intestinal tract of warm-blooded animals and are passed into the environment through feces. The presence of fecal coliform bacteria (E. coli) in drinking water may indicate recent contamination of the drinking water with fecal material. The following table indicates whether total coliform or fecal coliform bacteria were found in the monthly drinking water samples submitted for testing by your water supplier last year.

Total Coliform

Year	Contaminant	Highest Monthly % of Positive Samples	MCL	Unit of Measure	Source of Contaminant
2004	Total Coliform Bacteria	2	*	Presence	Naturally present in the environment.

*** Presence of coliform bacteria in 5% or more of the monthly samples.**

Fecal Coliform NOT DETECTED

Cryptosporidium

Cryptosporidium is a microscopic parasite affecting the digestive tracts of humans and animals. When cryptosporidium is ingested, it may result in diarrhea, cramps, fever and other gastrointestinal symptoms.

No specific drug therapy has proven to be effective, but people with healthy immune systems usually recover within two weeks. Individuals with weakened immune systems, however, may be unable to clear the parasite and suffer chronic and debilitating illness.

Disinfectant Residuals

Year	Constituent	Highest Average	Range of Detects (low-high)	MRDL	Units	Source
2004	Chloramines	2.9	1.0 – 3.7	4.0	ppm	Disinfectant used to control microbes

Secondary and Other Not Regulated Constituents

(No associated adverse health effects)

Year (Range)		Constituent	Average Level	Minimum Level	Maximum Level	Limit	Unit of Measure	Source of Constituent
2004	2004	Aluminum	4.417	0	341	50	ppb	Abundant naturally occurring element.
2004	2004	Bicarbonate	198.279	83	338	NA	ppm	Corrosion of carbonate rocks such as limestone.
2004	2004	Calcium	49.070	6.53	55.6	NA	ppm	Abundant naturally occurring element.
2004	2004	Chloride	52.283	22	80	300	ppm	Abundant naturally occurring element; used in water purification; byproduct of oil field activity
2004	2004	Copper	0.001	0	0.00817	NA	ppm	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
2004	2004	Hardness as Ca/Mg	126.750	104	167	NA	ppm	Naturally occurring calcium and magnesium.
2004	2004	Iron	0.042	0	0.249	0.3	ppm	Erosion of natural deposits; iron or steel water delivery equipment or facilities.
2004	2004	Lead	0.007	0	1.14	NA	ppb	Corrosion of household plumbing systems; erosion of natural deposits.
2004	2004	Magnesium	8.843	1.34	10.1	NA	ppm	Abundant naturally occurring element.
2004	2004	Manganese	3.140	0	38	50	ppm	Abundant naturally occurring element.
2004	2004	Nickel	0.255	0	4.7	NA	ppb	Erosion of natural deposits.
2004	2004	pH	7.259	6.8	7.9	NA	units	Measure of corrosivity of water.
2004	2004	Sodium	49.611	22.2	142	NA	ppm	Erosion of natural deposits; byproduct of oil field activity.
2004	2004	Sulfate	33.444	2.15	70	300	ppm	Naturally occurring; common industrial byproduct; byproduct of oil field activity.
2004	2004	Total Alkalinity as CaCO3	163.029	76	277	NA	ppm	Naturally occurring soluble mineral salts.
2004	2004	Total Dissolved Solids	235.986	152	380	1000	ppm	Total dissolved mineral constituents in water.
2004	2004	Total Hardness as CaCO3	158.941	21.8	180	NA	ppm	Naturally occurring calcium.
2004	2004	Zinc	161.011	0	70	5000	ppb	Moderately abundant naturally occurring element; used in the metal industry.