

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 necessarily 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. For more information on secondary constituents contact H₂O Consulting at **281-861-7265**.

CONSECUTIVE SYSTEMS PUBLIC NOTICE

The Texas Commission on Environmental Quality (TCEQ) sets minimum water quality standards for public drinking water. These standards include enforceable treatment technique requirements for drinking water. Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

The City of Houston (City), PWS ID TX1010013, failed to meet the minimum treatment technique requirements during October, November, and December 2017. Specifically, the City had low disinfectant (Total Chlorine) residuals in more than 5% of the monthly samples for two consecutive months.

This information is being provided because a portion of the water supplied to you may originate in the City's water system. However, prior to reaching consumers the water is further tested and treated by the West Harris County Regional Water Authority. In this instance, test results from the West Harris County Regional Water Authority during the City's noncompliance period indicate that despite the City's violation, the water provided by the West Harris County Regional Water Authority met the chlorine disinfectant residual level requirements.

Please share this information with all people who drink this water, especially those who may not have received this notice directly (i.e., people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

If you have questions regarding this matter, you may contact Vanessa Chapa, Environmental Compliance Advisor at **281-578-4268**.

SPECIAL NOTICE For the Elderly, Infants, Cancer Patients, People with HIV/AIDS or Other Immune Problems

You may be more vulnerable than the general population to certain microbial contaminants such as *Cryptosporidium*, in drinking water. Infants, some elderly, or immuno-compromised persons such as those undergoing chemotherapy for cancer; persons who have undergone organ transplants; those who are undergoing treatment with steroids; and people with HIV/AIDS or other immune system disorders can be particularly at risk from infections. You should seek advice about drinking water from your physician or health care provider. Additional guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Safe Drinking Water Hotline: **1-800-426-4791**.

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 Drinking Water Hotline **1-800-426-4791**.

QUESTIONS?

If you would like to talk to a District representative about your Water Quality Report, please call **281-861-7265**. For more information from the U.S. Environmental Protection Agency, you may call the EPA's Safe Drinking Water Hotline at **1-800-426-4791** or the EPA's website at www.epa.gov/safewater.

En español: Este reporte incluye información importante sobre el agua para tomar. Para asistencia en español, favor de llamar al telefono **281-861-7265**.

PUBLIC PARTICIPATION OPPORTUNITIES

The Board of Directors of Harris County MUD No. 188 meet at 12:00 PM on the third Wednesday of each month at 3200 SW Freeway, Suite 2600, Houston, TX. You may mail comments to:

Harris County MUD No. 188
Attn.: Board of Directors
5870 Highway 6 North, Suite 215, Houston, TX 77084

Or call **281-861-7265**

ABOUT OUR DRINKING WATER

The Texas Commission on Environmental Quality (TCEQ) has assessed our system and determined that our water is safe to drink. This analysis is based on the data in the attached tables. If your water meets federal standards there may not be any health benefits to purchasing bottled water or point-of-use devices.

WHERE DO WE GET OUR WATER?

Our drinking water is obtained from a combination of water sources. Surface water from the West Harris County Regional Water Authority (WHCRWA) and groundwater from the Chicot aquifer are blended at our water plant. The Texas Commission on Environmental Quality completed an assessment of your source water and results indicate that some of our sources are susceptible to certain contaminants. The sampling requirements for your water system are based on this susceptibility and previous sample data. Any detections of these contaminants will be found in this Consumer Confidence Report. If we receive or purchase water from another system, their susceptibility is not included in this report. For more information on source water assessments and protection efforts visit Texas Drinking Water Watch at <http://dww2.tceq.texas.gov/DWW/> or contact H₂O Consulting at **281-861-7265**.

ADDITIONAL HEALTH INFORMATION FOR LEAD

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. We are responsible for providing high quality drinking water, but we 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 two 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>.

WATER SOURCES

The sources of drinking water (both tap 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 prior to treatment include:

- **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants**, such as salts and metals which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, and farming.
- **Pesticides and herbicides**, which 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 which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- **Radioactive contaminants**, which 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, the U.S. Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Federal Food and Drug Administration Agency regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

HARRIS COUNTY MUNICIPAL UTILITY DISTRICT NO. 188
5870 Highway 6 North, Suite 215 • Houston, TX 77084
281-861-7265



2017 DRINKING WATER QUALITY REPORT



HARRIS COUNTY MUNICIPAL UTILITY DISTRICT NO. 188

PWD ID#: 1011982

ABOUT THE TABLES

The attached table contains all of the chemical contaminants which have been found in your drinking water. The U.S. EPA requires water systems to test for up to 97 contaminants. All contaminants detected in your water are below state and federal allowed levels. The State of Texas allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. In 2017, our system received surface water from Harris County MUD 162. Over 96% of our water is provided by WHCRWA. Their water quality information is provided below.

| HARRIS COUNTY MUD 188 – Lead and Copper (Regulated at the Customer's Tap) | | | | | | | | |
|---|-------------|-----|------|-----------------|-------------------|-----------------|-----------|--|
| Year | Contaminant | AL | MCLG | 90th Percentile | No. Sites Over AL | Unit of Measure | Violation | Source of Contaminant |
| 2017 | Copper | 1.3 | 1.3 | 0.455 | 0 | ppm | No | Erosion of natural deposits; leaching from wood preservatives; corrosion of household plumbing systems |
| 2017 | Lead | 15 | 0 | 0 | 0 | ppb | No | Corrosion of household plumbing systems; erosion of natural deposits |

| HARRIS COUNTY MUD 188 – Disinfection Byproducts | | | | | | | | |
|---|---|--------------------------|--------------------------|-----|---------|-----------------|-----------|--|
| Year | Contaminant | Highest or Average Level | Range of Detected Levels | MCL | MCLG | Unit of Measure | Violation | Source of Contaminant |
| 2017 | Haloacetic Acids (HAA5) ¹ | 22 | 18.5–23.1 | 60 | No Goal | ppb | No | Byproduct of drinking water disinfection |
| 2017 | Total Trihalomethanes (TTHM) ¹ | 23 | 20.5–27.3 | 80 | No Goal | ppb | No | Byproduct of drinking water disinfection |

| HARRIS COUNTY MUD 188 – Inorganic Contaminants | | | | | | | | |
|--|--------------------------------|--------------------------|--------------------------|-----|------|-----------------|-----------|---|
| Year | Contaminant | Highest or Average Level | Range of Detected Levels | MCL | MCLG | Unit of Measure | Violation | Source of Contaminant |
| 2016 | Barium | 0.0434 | 0.0434–0.0434 | 2 | 2 | ppm | No | Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits |
| 2017 | Cyanide | 110 | 30–110 | 200 | 200 | ppb | No | Discharge from plastic and fertilizer factories; discharge from steel/metal factories |
| 2017 | Fluoride | 0.47 | 0.47–0.47 | 4 | 4 | ppm | No | Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories |
| 2017 | Nitrate (measured as Nitrogen) | 0.69 | 0.69–0.69 | 10 | 10 | ppm | No | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |
| 2015 | Nitrite (measured as Nitrogen) | 0.01 | 0.01–0.01 | 1 | 1 | ppm | No | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |

| HARRIS COUNTY MUD 188 – Radioactive Contaminants | | | | | | | | |
|--|-----------------------------------|--------------------------|--------------------------|-----|------|-----------------|-----------|--|
| Year | Contaminant | Highest or Average Level | Range of Detected Levels | MCL | MCLG | Unit of Measure | Violation | Source of Contaminant |
| 2014 | Beta/Photon Emitters ² | 6 | 6–6 | 50 | 0 | pCi/L | No | Decay of natural and man-made deposits |
| 2014 | Combined Radium 226/228 | 1 | 1–1 | 5 | 0 | pCi/L | No | Erosion of natural deposits |

| HARRIS COUNTY MUD 188 – Synthetic Organic Contaminants (Including Pesticides and Herbicides) | | | | | | | | |
|--|-------------|--------------------------|--------------------------|-----|------|-----------------|-----------|---|
| Year | Contaminant | Highest or Average Level | Range of Detected Levels | MCL | MCLG | Unit of Measure | Violation | Source of Contaminant |
| 2017 | Atrazine | 0.21 | 0.21–0.21 | 3 | 3 | ppb | No | Runoff from herbicide used on row crops |

| HARRIS COUNTY MUD 188 – Disinfectant Residual | | | | | | | | |
|---|---------------------------|--------------------------|--------------------------|-----|------|-----------------|-----------|---|
| Year | Disinfectant | Highest or Average Level | Range of Detected Levels | MCL | MCLG | Unit of Measure | Violation | Source of Contaminant |
| 2017 | Chloramines/Free Chlorine | 2.62 | 0.4–3.9 | 4 | 4 | ppm | No | Water additive used to control microbes |

| HARRIS COUNTY MUD 162 – Disinfection Byproducts | | | | | | | | |
|---|---|--------------------------|--------------------------|-----|---------|-----------------|-----------|--|
| Year | Contaminant | Highest or Average Level | Range of Detected Levels | MCL | MCLG | Unit of Measure | Violation | Source of Contaminant |
| 2017 | Haloacetic Acids (HAA5) ¹ | 24 | 22.8–24.5 | 60 | No Goal | ppb | No | Byproduct of drinking water disinfection |
| 2017 | Total Trihalomethanes (TTHM) ¹ | 28 | 25.5–29.6 | 80 | No Goal | ppb | No | Byproduct of drinking water disinfection |

| HARRIS COUNTY MUD 162 – Inorganic Contaminants | | | | | | | | |
|--|--------------------------------|--------------------------|--------------------------|-----|------|-----------------|-----------|---|
| Year | Contaminant | Highest or Average Level | Range of Detected Levels | MCL | MCLG | Unit of Measure | Violation | Source of Contaminant |
| 2016 | Barium | 0.0504 | 0.0504–0.0504 | 2 | 2 | ppm | No | Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits |
| 2017 | Cyanide | 140 | 140–140 | 200 | 200 | ppb | No | Discharge from plastic and fertilizer factories; discharge from steel/metal factories |
| 2017 | Fluoride | 0.44 | 0.44–0.44 | 4 | 4 | ppm | No | Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories |
| 2017 | Nitrate (measured as Nitrogen) | 1 | 0.74–0.74 | 10 | 10 | ppm | No | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |

| HARRIS COUNTY MUD 162 – Radioactive Contaminants | | | | | | | | |
|--|-----------------------------------|--------------------------|--------------------------|-----|------|-----------------|-----------|--|
| Year | Contaminant | Highest or Average Level | Range of Detected Levels | MCL | MCLG | Unit of Measure | Violation | Source of Contaminant |
| 2013 | Beta/Photon Emitters ² | 5 | 5–5 | 50 | 0 | pCi/L | No | Decay of natural and man-made deposits |
| 2013 | Combined Radium 226/228 | 1 | 1–1 | 5 | 0 | pCi/L | No | Erosion of natural deposits |

| HARRIS COUNTY MUD 162 – Synthetic Organic Contaminants (Including Pesticides and Herbicides) | | | | | | | | |
|--|-------------|--------------------------|--------------------------|-----|------|-----------------|-----------|---|
| Year | Contaminant | Highest or Average Level | Range of Detected Levels | MCL | MCLG | Unit of Measure | Violation | Source of Contaminant |
| 2017 | Atrazine | 0.24 | 0.24–0.24 | 3 | 3 | ppb | No | Runoff from herbicide used on row crops |

| WHCRWA – Disinfection Byproducts | | | | | | | | |
|----------------------------------|------------------------------|--------------------------|--------------------------|-----|---------|-----------------|-----------|--|
| Year | Contaminant | Highest or Average Level | Range of Detected Levels | MCL | MCLG | Unit of Measure | Violation | Source of Contaminant |
| 2015 | Haloacetic Acids (HAA5) | 20.5 | 20.5–20.5 | 60 | No Goal | ppb | No | Byproduct of drinking water disinfection |
| 2015 | Total Trihalomethanes (TTHM) | 32.4 | 32.4–32.4 | 80 | No Goal | ppb | No | Byproduct of drinking water disinfection |

| WHCRWA – Inorganic Contaminants | | | | | | | | |
|---------------------------------|--------------------------------|--------------------------|--------------------------|-----|------|-----------------|-----------|---|
| Year | Contaminant | Highest or Average Level | Range of Detected Levels | MCL | MCLG | Unit of Measure | Violation | Source of Contaminant |
| 2017 | Arsenic | 2.9 | 0–5.7 | 10 | 0 | ppb | No | Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes |
| 2017 | Barium | 0.17 | 0.0446–0.398 | 2 | 2 | ppm | No | Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits |
| 2017 | Cyanide | 42.86 | 0–100 | 200 | 200 | ppb | No | Discharge from plastic and fertilizer factories; discharge from steel/metal factories |
| 2017 | Chromium | 10.1 | 10.1–10.1 | 100 | 100 | ppb | No | Natural erosion |
| 2017 | Fluoride | 0.31 | 0–0.51 | 4 | 4 | ppm | No | Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories |
| 2017 | Nitrate (measured as Nitrogen) | 0.33 | 0.33–0.33 | 10 | 10 | ppm | No | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |
| 2017 | Selenium | 2.94 | 0–7.9 | 50 | 50 | ppb | No | Erosion of natural deposits |

| WHCRWA – Volatile Organic Contaminants | | | | | | | | |
|--|--------------|--------------------------|--------------------------|-----|------|-----------------|-----------|------------------------------------|
| Year | Contaminant | Highest or Average Level | Range of Detected Levels | MCL | MCLG | Unit of Measure | Violation | Source of Contaminant |
| 2017 | Ethylbenzene | 1.1 | 0–2.2 | 700 | 700 | ppb | No | Discharge from petroleum factories |
| 2017 | Toluene | 0.0005 | 0–0.001 | 1 | 1 | ppm | No | Discharge from petroleum factories |
| 2017 | Xylenes | 0.01 | 0–0.013 | 10 | 10 | ppm | No | Discharge from petroleum factories |

| WHCRWA – Radioactive Contaminants (Regulated at the Water Plant) | | | | | | | | |
|--|-------------------------|--------------------------|--------------------------|-----|------|-----------------|-----------|--|
| Year | Contaminant | Highest or Average Level | Range of Detected Levels | MCL | MCLG | Unit of Measure | Violation | Source of Contaminant |
| 2017 | Combined Radium | 1.38 | 0–2.99 | 5 | 0 | pCi/L | No | Erosion of natural deposits |
| 2017 | Gross Alpha | 4.29 | 0–10 | 15 | 0 | pCi/L | No | Erosion of natural deposits |
| 2017 | Gross Beta ² | 3.34 | 0–8.7 | 50 | 0 | pCi/L | No | Decay of natural and man-made deposits |
| 2017 | Radium 228 | 0.62 | 0–1.39 | 5 | 0 | pCi/L | No | Erosion of natural deposits |
| 2017 | Uranium | 2.55 | 0–11.42 | 30 | 0 | pCi/L | No | Erosion of natural deposits |

| WHCRWA – Synthetic Organic Contaminants (Including Pesticides and Herbicides) | | | | | | | | |
|---|---------------------------|--------------------------|--------------------------|-----|------|-----------------|-----------|--|
| Year | Contaminant | Highest or Average Level | Range of Detected Levels | MCL | MCLG | Unit of Measure | Violation | Source of Contaminant |
| 2017 | Atrazine | 0.24 | 0–0.91 | 3 | 3 | ppb | No | Runoff from herbicide used on row crops |
| 2017 | Di(2-ethylhexyl)phthalate | 0.6 | 0–1.4 | 6 | 6 | ppb | No | Discharge from rubber and chemical factories |
| 2017 | Endrin | 0.01 | 0–0.01 | | 2 | ppb | | Residue from herbicide use |
| 2017 | Glyphosate | 4 | 4–4 | | 700 | ppb | | Runoff from herbicide use |
| 2017 | Simazine | 2 | 0–19 | 4 | 4 | ppb | No | Herbicide runoff |

| WHCRWA – Unregulated Contaminants ³ | | | | | | | | |
|--|----------------------|--------------------------|--------------------------|-----|------|-----------------|-----------|--|
| Year | Contaminant | Highest or Average Level | Range of Detected Levels | MCL | MCLG | Unit of Measure | Violation | Source of Contaminant |
| 2017 | Bromodichloromethane | 6.73 | 0–12 | NA | NA | ppb | No | Byproduct of drinking water disinfection |
| 2017 | Bromoform | 3.33 | 0–11 | NA | NA | ppb | No | Byproduct of drinking water disinfection |
| 2017 | Chloroform | 15.29 | 0–47 | NA | NA | ppb | No | Byproduct of drinking water disinfection |
| 2017 | Dibromochloromethane | 4.75 | 0–20 | NA | NA | ppb | No | Byproduct of drinking water disinfection |

¹The value in the Highest Level or Average Detected column is the highest average of all HAA5 and TTHM sample results collected at a location over a year.

²The EPA considers 50 pCi/L to be the level of concern for beta particles.

³Unregulated 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.

DEFINITIONS AND UNIT DESCRIPTIONS

AL Action Level – The concentration level of a contaminant which, if exceeded, requires a water system to treat water or follow other requirements.

Avg Regulatory compliance with some MCLs are based on running annual average of monthly samples

MCL Maximum Contaminant Level – 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.

MCLG Maximum Contaminant Level Goal – 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.

MFL Million Fibers per Liter (a measure of asbestos)

MRDL Maximum Residual Disinfection Level – 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.

MRDLG Maximum Residual Disinfection Level Goal – The level of a drinking water disinfectant below which there is no known or expected health risk. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

mrem/yr Millirems per Year (a measure of radiation absorbed by the body)

NA Not applicable

NTU Nephelometric turbidity units (a measure of turbidity)

pCi/L Picouries per liter (a measure of radioactivity)

ppb Parts per billion, or micrograms per liter (µg/L), or one ounce in 7,350,000 gallons of water.

ppm Parts per million, or milligrams per liter (mg/L), or one ounce in 7,350 gallons of water.

ppq Parts per quadrillion, or picograms per liter (pg/L)

ppt Parts per trillion, or nanograms per liter (ng/L)

TT Treatment Technique – a required process intended to reduce the level of a contaminant in drinking water