

2023 Annual Drinking Water Quality Report
(For period January through December 2022)

**HARVEST MONROVIA
WATER & SEWER AUTHORITY**



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We are pleased to present to you this year's Annual Water Quality Report. This report is delivered to you each year to provide information about the quality of water the Authority provides to our customers. Last year, as in years past, your tap water met all U.S. Environmental Protection Agency (EPA) and Alabama Department of Environmental Management (ADEM) drinking water health standards. We diligently safeguard your water supplies, and once again we are proud to report that our system has not violated any water quality standard.

Water Sources	8 groundwater wells producing from the Tusculumbia-Fort Payne Aquifer
Water Treatment	<u>10 MGD Burwell Treatment Plant</u> : flocculation, filtration, chlorination, fluoridation, coagulation, corrosion control <u>4.1 MGD Mt Zion Treatment Plant</u> : microfiltration, chlorination, fluoridation, corrosion control
Storage Capacity	7 water storage facilities with a capacity of 11.5 million gallons
Population Served	Approximately 51,912
Interconnections	Madison County Water Department, Huntsville Utilities, Madison Water Works Board, and Limestone County Water Authority
Board Members	Frank Turner, Chairman Tracy Brewer, Vice Chairman Brant Neely, Secretary

Excellence Awards

Our goal at Harvest-Monrovia Water and Sewer Authority is to provide clean, safe drinking water to our customers throughout the year, and our staff strives each day to accomplish this goal. Our water system has won many excellence awards in our population-served division. Our recent awards include:

- 2022 AWPCA Best Operated Plant Award 50,001 - 100,000 Population
- 2022 AWPCA Best Operated Distribution System
- 2007-2021 EPA and ADEM Optimization Award for Optimized Water Treatment



Water Quality Protection

Harvest-Monrovia Water and Sewer Authority developed a Source Water Assessment Plan (SWAP) that assists in protecting our water sources. All components of the SWAP were completed, and the plan was approved by ADEM. As part of the assessment process, information on potential contaminant sources was defined, and the major sources were ascertained to be existing wells, agricultural run-off and septic tanks. The SWAP is available for review at the water office during regular business hours.

Harvest-Monrovia Water and Sewer Authority routinely completes a water storage facility inspection and utilizes a Bacteriological Monitoring Plan. The required chlorine residual is maintained throughout our distribution system to protect your drinking water from possible outside contaminants. Please help us make these efforts worthwhile by protecting our source water. Carefully follow instructions on pesticides and herbicides you use for your lawn and garden, and properly dispose of household chemicals, paints, and waste oil. We ask that all our customers help us protect our valuable water sources, which are the heart of our community, our way of life, and our children's futures.

Consumer Information

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. Maximum Contaminant Levels (MCLs - defined in the List of Definitions in this report) are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million

chance of having the described health effect. 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 radioactive material, and it can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water 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 storm water run-off, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, storm water run-off, 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 storm water 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, EPA prescribes regulations which limit the levels of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water. 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. People at risk should seek advice about drinking water from their health care providers.

Information about Lead

Elevated levels of lead can cause serious health problems, especially for pregnant women, infants, and young children. However, *lead is rarely found in source water*. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Your water system 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.

Use *only* water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water is more likely to cause lead to leach from plumbing materials. 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 www.epa.gov/safewater.

Microbiological Contaminants

Water sources that are surface water or groundwater under the influence of surface water are tested for pathogens such as Cryptosporidium at certain intervals determined by the EPA and ADEM. These pathogens can enter the water from animal or human waste. All test results were well within Federal and State standards.

Microbiological Contaminants	Levels Detected	Unit Msmt	Likely Source
Cryptosporidium	ND	Oocysts/L	Wildlife and/or human waste
Giardia	ND	Cysts/L	Wildlife and/or human waste
E. Coli	ND	#/100mL	Wildlife and/or human waste
Turbidity	0.08-6.8	NTU	Soil runoff

For people who may be immuno-compromised, the document "Guidance for People with Severely Weakened Immune Systems" is available online on the EPA's website at <https://nepis.epa.gov/Ee/ZyPURL.cgi?Dockey=200024LD.txt> or from the Safe Drinking Water Hotline at 1-800-426-4791. Testing for the microbiological contaminants was performed on raw water, before any treatment. Cryptosporidium has *not* been detected in our finished drinking water.

Questions?

If you have any questions about this report or concerning your water utility, please contact Mike Oliver at 256-837-1132. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the second Tuesday of each month at 1:30 p.m. at the water office. More information about drinking water contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (1-800-426-4791).

Monitoring Schedule

We routinely monitor your drinking water for contaminants according to Federal and State laws. The Alabama Department of Environmental Management allows us to monitor for some contaminants less than once per year because the levels of these contaminants do not change frequently. This report contains results from the most recent monitoring which was performed in accordance with the regulatory schedule. We are pleased to report that our drinking water meets or exceeds federal and state requirements. Based on a study conducted by ADEM with the approval of the EPA, a statewide waiver for the monitoring of asbestos and dioxin was issued. Thus, monitoring for these contaminants was not required.

Constituents Monitored	Monitored
Inorganic Contaminants	2022
Lead/Copper	2022
Microbiological Contaminants	current
Nitrates	2022
Radioactive Contaminants	2020
Synthetic Organic Contaminant	2022
Volatile Organic Contaminants	2020
Disinfection By-products	2022
Cryptosporidium (on raw water)	2017
UCMR4 Contaminants	2018
PFAS Contaminants	2022

Monitoring Results

DETECTED DRINKING WATER CONTAMINANTS						
Primary Contaminants	Violation Y/N	Levels Detected	Unit Msmt	MCLG	MCL	Likely Source
Chlorine, finished water	NO	1.6-2.2	ppm	MRDLG=4	MRDL=4	Water additive used to control microbes
Total organic carbon	NO	ND-1.0	ppm	RAA<2.0	TT	Naturally present in the environment
Turbidity, filtered water	NO	0.01-0.019	NTU	n/a	0.3	Soil runoff: Indicator of the effectiveness of filtration
Barium	NO	0.002	ppm	2	2	Drilling waste and refinery discharge; erosion
Chromium	NO	0.017-0.80	ppb	100	100	Steel and pulp mill discharge; erosion of natural deposits
Copper	NO	0.0037-0.695	ppm	1.3	AL=1.3	Household plumbing corrosion; erosion; preservative leaching
Fluoride	NO	0.01-1.30	ppm	4	4	Erosion; water additive; fertilizer & aluminum factory discharge
Lead	NO	ND	ppm	0	AL=0.015	Corrosion of household plumbing systems, erosion
Mercury (inorganic)	NO	0.13-0.14	ppb	2	2	Erosion; discharge from industry; runoff
Nitrate (as Nitrogen)	NO	2.88-3.29	ppm	10	10	Fertilizer runoff; septic tank leaching, sewage; erosion
Bis [2-Ethylhexyl] phthalate	NO	ND-0.04	ppb	0	6	Discharge from rubber chemical factories
THM [Total trihalomethanes]	NO	ND-48.9	ppb	0	80	By-product of drinking water chlorination
HAA5 [Total haloacetic acids]	NO	ND-42.3	ppb	0	60	By-product of drinking water chlorination
Unregulated Contaminants						
Chloroform	NO	13.0	ppb	70	n/a	Naturally occurring or from discharge or runoff
Bromodichloromethane	NO	4.41	ppb	0	n/a	Naturally occurring or from discharge or runoff
Chlorodibromomethane	NO	1.85	ppb	60	n/a	Naturally occurring or from discharge or runoff
Naphthalene	NO	1.20	ppb	100	n/a	Factory discharge; landfill runoff; insecticide and pesticide runoff
Secondary Contaminants						
Alkalinity, Total (as CA, CO ₃)	NO	86-142	ppm	n/a	n/a	Caused by carbonates, bicarbonates and hydroxides
Aluminum	NO	ND-0.014	ppm	n/a	0.2	Erosion of natural deposits or from water treatment
Calcium	NO	6.4-44.6	ppm	n/a	n/a	Naturally occurring; dissolved minerals
Carbon Dioxide	NO	30-90	ppm	n/a	n/a	Naturally occurring or used to adjust pH
Chloride	NO	8.14-8.57	ppm	n/a	250	Naturally occurring in the environment or from runoff
Hardness	NO	24.1-145	ppm	n/a	n/a	Naturally occurring in the environment or from treatment
Iron	NO	ND-0.07	ppm	n/a	0.30	Naturally occurring; erosion; leaching from pipes
Magnesium	NO	1.98-8.26	ppm	n/a	n/a	Naturally occurring; dissolved minerals
Manganese	NO	ND-0.03	ppm	n/a	0.05	Erosion of natural deposits; leaching from pipes
Nickel	NO	0.002-0.005	ppm	n/a	n/a	Erosion of natural deposits; leaching from pipes
pH	NO	6.7-7.2	S.U.	n/a	n/a	Naturally occurring in the environment or from treatment
Silver	NO	ND-0.008	ppm	n/a	0.10	Naturally occurring in the environment
Sodium	NO	4.31-5.88	ppm	n/a	n/a	Naturally occurring in the environment
Specific Conductance	NO	83.3-295	µs/cm	n/a	n/a	Indicates presence of natural ions that conduct electricity.
Sulfate	NO	0.56-2.3	ppm	n/a	250	Naturally present in the environment or from runoff
Total Dissolved Solids	NO	51-185	ppm	n/a	500	Naturally present in the environment or from runoff
Zinc	NO	0.004-0.07	ppm	n/a	5	Erosion; discharge from industry; runoff from landfills

FOURTH UNREGULATED CONTAMINANT MONITORING RULE (UCMR4) CONTAMINANTS								
Contaminants	Unit Msmt	Level Detected	Contaminants	Unit Msmt	Level Detected	Contaminants	Unit Msmt	Level Detected
Germanium	ppb	ND	Oxyfluorfen	ppb	ND	2-methoxyethanol	ppb	ND
Manganese	ppb	ND-8.75	Profenofos	ppb	ND	2-propen-1-ol	ppb	ND
Alpha-hexachlorocyclohexane	ppb	ND	Tebuconazole	ppb	ND	Butylated hydroxyanisole	ppb	ND
Chlorpyrifos	ppb	ND	Total permethrin (cis- & trans-)	ppb	ND	O-toluidine	ppb	ND
Dimethipin	ppb	ND	Tribufos	ppb	ND	Quinoline	ppb	ND-0.05
Ethoprop	ppb	ND	1-butanol	ppb	ND			
Cyanotoxins								
Anatoxin-A	ppb	ND	Microcystin-LR	ppb	ND	Nodularin	ppb	ND
Cylindrospermopsin	ppb	ND	Microcystin-LY	ppb	ND	Total Microcystins	ppb	ND
Microcystin-LA	ppb	ND	Microcystin-RR	ppb	ND			
Microcystin-LF	ppb	ND	Microcystin-YR	ppb	ND			
Distribution Samples								
HAA5	ppb	ND-2.19	HAA9	ppb	ND-2.19	Total organic carbon (TOC)	ppb	ND-1020
HAA6Br	ppb	ND-2.16				Bromide	ppb	ND-25.7

Monitoring Non-compliance 2022

Due to a laboratory error not involving our water system staff, a Total Haloacetic Acids (HAA5) non-compliance was incurred for the October- December 2022 monitoring period. The non-compliance occurred because of an analysis error in the laboratory. A replacement sample was collected, and results were in compliance. Any HAA5 results above detection levels are listed in this CCR table "Detected Drinking Water Contaminants."

PFAS Contaminants

Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals that were used in the manufacture of nonstick cookware, stain-resistant carpet and textiles, firefighting foams, food wrappers, and many more industrial and consumer applications. Below is a list of PFAS contaminants for which our water sources were monitored as required and the results of that monitoring. For more information on PFAS contaminants, please refer to the USEPA's website, www.epa.gov/pfas.

PFAS (in ppb)			
Contaminant	Level Detected	Contaminant	Level Detected
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND	Perfluoroheptanoic acid	ND
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	ND	Perfluorohexanesulfonic acid	ND-0.0026
4,8-dioxa-3H-perfluorononanoic acid	ND	Perfluorononanoic acid	ND
Hexafluoropropylene oxide dimer acidA	ND	Perfluorooctanesulfonic acid	ND-0.0054
N-ethylperfluorooctanesulfonamidoacetic acid	ND	Perfluorooctanoic acid	ND-0.0042
N-methylperfluorooctanesulfonamidoacetic acid	ND	Perfluorotetradecanoic acid	ND
Perfluorobutanesulfonic acid	ND-0.0045	Perfluorotridecanoic acid	ND
Perfluorodecanoic acid	ND	Perfluoroundecanoic acid	ND
Perfluorohexanoic acid	ND-0.0035	Total PFAS	0.0200
Perfluorododecanoic acid	ND		

DEFINITIONS

Action Level- the concentration of a contaminant that, if exceeded, triggers treatment or other requirements for a water system.

ADEM- Alabama Department of Environmental Management.

Coliform Absent- (ca) indicates that coliform bacteria is not present.

Disinfection byproducts- (DBPs) are formed when disinfectants react with bromide and/or natural organic matter present in the source water. Disinfection byproducts for which we test are trihalomethanes (TTHM), haloacetic acids (HAA5), bromate, and chlorite.

Distribution System Evaluation- (DSE) a four quarter study to identify locations with high concentrations of disinfection byproducts.

EPA- Environmental Protection Agency.

Maximum Contaminant Level- (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal- (MCLG) the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level- (MRDL) the highest level of a disinfectant allowed in drinking water

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

Micrograms per liter- (ug/L) Equivalent to parts per billion (ppb) since one liter of water is equal in weight to one billion micrograms.

Milligrams per liter- (mg/L) Equivalent to parts per million

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

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

Non-Detects- (ND) laboratory analysis indicates that the constituent is not present above the detection limits of lab equipment.

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

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

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

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

Running Annual Average- (RAA) running yearly average of results at each specific sampling site.

Standard Units- (S.U.) pH of water measures the water's balances of acids and bases and is affected by temperature and carbon dioxide gas.

Treatment Technique- (TT) required process intended to reduce the level of a contaminant in drinking water.

Variances & Exemptions- (V&E) State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

Below is a table of contaminants for which the Environmental Protection Agency and the Alabama Department of Environmental Management require testing. These contaminants were not detected in your drinking water unless they are also listed in the Detected Drinking Water Contaminants table elsewhere in this report.

STANDARD LIST OF PRIMARY DRINKING WATER CONTAMINANTS					
Contaminant	MCL	Unit of Msmt	Contaminant	MCL	Unit of Msmt
Bacteriological Contaminants			trans-1,2-Dichloroethylene	100	ppb
Total Coliform Bacteria	<5%	present/absent	Dichloromethane	5	ppb
Fecal Coliform and E. coli	0	present/absent	1,2-Dichloropropane	5	ppb
Turbidity	TT	NTU	Di (2-ethylhexyl)adipate	400	ppb
Cryptosporidium	TT	Calc.organisms/l	Di (2-ethylhexyl)phthalate	6	ppb
Radiological Contaminants			Dinoseb	7	ppb
Beta/photon emitters	4	mrem/yr	Dioxin [2,3,7,8-TCDD]	30	ppq
Alpha emitters	15	pCi/l	Diquat	20	ppb
Combined radium	5	pCi/l	Endothall	100	ppb
Uranium	30	pCi/l	Endrin	2	ppb
Inorganic Chemicals			Epichlorohydrin	TT	TT
Antimony	6	ppb	Ethylbenzene	700	ppb
Arsenic	10	ppb	Ethylene dibromide	50	ppt
Asbestos	7	MFL	Glyphosate	700	ppb
Barium	2	ppm	Heptachlor	400	ppt
Beryllium	4	ppb	Heptachlor epoxide	200	ppt
Cadmium	5	ppb	Hexachlorobenzene	1	ppb
Chromium	100	ppb	Hexachlorocyclopentadiene	50	ppb
Copper	AL=1.3	ppm	Lindane	200	ppt
Cyanide	200	ppb	Methoxychlor	40	ppb
Fluoride	4	ppm	Oxamyl [Vydate]	200	ppb
Lead	AL=15	ppb	Polychlorinated biphenyls	0.5	ppb
Mercury	2	ppb	Pentachlorophenol	1	ppb
Nitrate	10	ppm	Picloram	500	ppb
Nitrite	1	ppm	Simazine	4	ppb
Selenium	.05	ppm	Styrene	100	ppb
Thallium	.002	ppm	Tetrachloroethylene	5	ppb
Organic Contaminants			Toluene	1	ppm
2,4-D	70	ppb	Toxaphene	3	ppb
Acrylamide	TT	TT	2,4,5-TP(Silvex)	50	ppb
Alachlor	2	ppb	1,2,4-Trichlorobenzene	.07	ppm
Benzene	5	ppb	1,1,1-Trichloroethane	200	ppb
Benzo(a)pyrene [PAHs]	200	ppt	1,1,2-Trichloroethane	5	ppb
Carbofuran	40	ppb	Trichloroethylene	5	ppb
Carbon tetrachloride	5	ppb	Vinyl Chloride	2	ppb
Chlordane	2	ppb	Xylenes	10	ppm
Chlorobenzene	100	ppb	Disinfectants & Disinfection Byproducts		
Dalapon	200	ppb	Chlorine	4	ppm
Dibromochloropropane	200	ppt	Chlorine Dioxide	800	ppb
1,2-Dichlorobenzene	1000	ppb	Chloramines	4	ppm
1,4-Dichlorobenzene (para)	75	ppb	Bromate	10	ppb
o-Dichlorobenzene	600	ppb	Chlorite	1	ppm
1,2-Dichloroethane	5	ppb	HAA5 [Total haloacetic acids]	60	ppb
1,1-Dichloroethylene	7	ppb	THM [Total trihalomethanes]	80	ppb
cis-1,2-Dichloroethylene	70	ppb			
LIST OF UNREGULATED CONTAMINANTS					
1,1 – Dichloropropene	Aldicarb	Chloroform	Metolachlor		
1,1,1,2-Tetrachloroethane	Aldicarb Sulfone	Chloromethane	Metribuzin		
1,1,2,2-Tetrachloroethane	Aldicarb Sulfoxide	Dibromochloromethane	N - Butylbenzene		
1,1-Dichloroethane	Aldrin	Dibromomethane	Naphthalene		
1,2,3 - Trichlorobenzene	Bromobenzene	Dicamba	N-Propylbenzene		
1,2,3 - Trichloropropane	Bromochloromethane	Dichlorodifluoromethane	O-Chlorotoluene		
1,2,4 - Trimethylbenzene	Bromodichloromethane	Dieldrin	P-Chlorotoluene		
1,3 – Dichloropropane	Bromoform	Hexachlorobutadiene	P-Isopropyltoluene		
1,3 – Dichloropropene	Bromomethane	Isopropylbenzene	Propachlor		
1,3,5 - Trimethylbenzene	Butachlor	M-Dichlorobenzene	Sec - Butylbenzene		
2,2 – Dichloropropane	Carbaryl	Methomyl	Tert - Butylbenzene		
3-Hydroxycarbofuran	Chloroethane	MTBE	Trichlorofluoromethane		
LIST OF SECONDARY CONTAMINANTS					
Alkalinity, Total (as CA, CO ₃)	Copper	Magnesium	Silver		
Aluminum	Corrosivity	Manganese	Sodium		
Calcium, as Ca	Foaming agents (MBAS)	Odor	Sulfate		
Chloride	Hardness	Nickel	Total Dissolved Solids		
Color	Iron	pH	Zinc		