

2022 Annual Drinking Water Quality Report (For period January through December 2021)

HALE COUNTY WATER AUTHORITY

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We are pleased to present to you this year's Annual Water Quality Report. 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	4 groundwater wells producing from the Eutaw and Coker aquifers and		
	Purchased water from City of Greensboro (4 groundwater wells)		
Additional Connections	Sell water to Akron Water Department and City of Linden		
	Emergency connections with Town of Moundville, Perry County, and Faunsdale		
Water Treatment	Chlorination for disinfection and lime for pH balance		
Storage Capacity	6 tanks with a total capacity of 1,700,000 gallons		
Number of Customers	Approximately 3100		
Water Board Members	Ronnie Thomas, Chairman	Staff Members	Paula Brame, Manager/Operator
	Terry Hamilton, Secretary-Treasurer		Latanya Watkins, Office Manager
	Elouise George, Member		
	Richard Moore, Member		
	Charles Hall, Member		

Water Quality Protection

In compliance with the Alabama Department of Environmental Management (ADEM), Hale County Water Authority has developed a Source Water Assessment plan that will assist in protecting our water sources. The assessment has been performed, public notification has been completed, and the plan has been approved by ADEM. A copy of the report is available in our office for review during regular business hours, or you may purchase a copy upon request for a nominal reproduction fee.

Hale County Water Authority routinely completes a water storage facility inspection plan 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.

Information about 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. 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 likely to contain higher levels of lead. The two actions recommended above are very important to the health of your family. They will probably be effective in reducing lead levels because most of the lead in household water usually comes from the plumbing in your house, not from the local water supply. 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/lead.

Questions?

If you have any questions about this report or concerning your water utility, please contact Paula Brame. 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 third Thursday of each month at 5:00 p.m. at the water office. More information about contaminants to drinking water and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (1-800-426-4791).

General Information

All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. MCL's, defined in a 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 amount 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. People who are immunocompromised such as cancer patients undergoing chemotherapy, organ transplant recipients, HIV/AIDS positive 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. EPA/CDC guidelines on appropriate means to lessen the risk of infection by microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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.

Monitoring Schedule

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The Alabama Department of Environmental Management (ADEM) allows us to monitor for some contaminants less than once per year because the concentrations 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.

Constituents Monitored	Hale Co.	Greensboro
Inorganic Contaminants	2019	2019
Lead/Copper	2021	2019
Microbiological Contaminants	current	current
Nitrates	2021	2021
Radioactive Contaminants	2020	2019
Synthetic Organic Contaminants (including herbicides and pesticides)	2021	2019
Volatile Organic Contaminants	2021	2021
Disinfection By-products	2021	2021
PFAS Contaminants	2020	2020

Drinking Water Test Results – Hale County Water Authority

We have learned through our monitoring and testing that some constituents have been detected. We are pleased to report that our drinking water meets or exceeds federal and state requirements. This report shows our water quality and what it means.

DETECTED DRINKING WATER CONTAMINANTS – Hale County Water						
Contaminants	Violation Y/N	Level Detected	Unit Msmt	MCLG	MCL	Likely Source of Contamination
Alpha emitters	NO	3.09	PCI/l	0	15	Erosion of natural deposits
Total Coliform Bacteria	NO	3 positive samples ¹	Present or Absent	0	presence in 5% of monthly samples	Naturally present in the environment; used as an indicator that other bacteria may be present
Barium	NO	ND – 0.36	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper	NO	1.2 ² 1 > AL	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead	NO	0.002 ³ 0 > AL	ppm	0.015	AL=0.015	Corrosion of household plumbing systems, erosion of natural deposits
Nitrate (as Nitrogen)	NO	0.18-0.22	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
TTHM [Total trihalomethanes]	NO	4.10-4.80	ppb	0	80	By-product of drinking water chlorination
HAA5 [Total haloacetic acids]	NO	3.10-3.50	ppb	0	60	By-product of drinking water chlorination
Secondary Contaminants						
Aluminum	NO	ND	ppm	n/a	0.2	Erosion of natural deposits or from water treatment
Chloride	NO	2.67-5.16	ppm	n/a	250	Naturally occurring or from discharge or runoff
Hardness	NO	ND-56.9	ppm	n/a	n/a	Naturally occurring or from water treatment
Iron	NO	ND	ppm	n/a	0.30	Naturally occurring; erosion; leaching from pipes
Manganese	NO	ND	ppm	n/a	0.05	Erosion of natural deposits; leaching from pipes
pH	NO	7.74-7.95	S.U.	n/a	n/a	Naturally occurring or from water treatment
Sodium	NO	0.92-46.3	ppm	n/a	n/a	Naturally occurring in the environment
Sulfate	NO	0.96-4.22	ppm	n/a	250	Naturally occurring or from discharge or runoff
Total Dissolved Solids	NO	ND-176	ppm	n/a	500	Naturally occurring or from discharge or runoff

¹ Positive samples occurred in the months of August, October, and December. This was not a violation but triggered a Level 1 Assessment. We conducted the assessment and submitted it to ADEM. Several factors could cause a positive sample: a dirty faucet, rainwater, or even airborne particles. Coliform bacteria are naturally present in the environment but not naturally present in groundwater; however, coliform bacteria can be an indication that other, potentially harmful, bacteria may be present. A positive coliform bacteria sample is not an immediate health concern. We will continue to monitor for coliform bacteria as required.

² Figure shown is 90th percentile and # of sample sites exceeding Action Level (1.3 ppm) = 1

³ Figure shown is 90th percentile and # of sites exceeding Action Level (0.015 ppm) = 0

PFAS Contaminants – Hale County Water

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 other industrial and consumer applications. The U.S. Environmental Protection Agency (EPA) has not established national primary drinking water regulations for PFAS substances. The lifetime health advisory level for PFOA and PFOS is a combined 70 parts per trillion, or 0.00007 mg/L. Below is a list of PFAS contaminants for which our system monitored in 2020 as required and the results of that monitoring. PFAS was *not* detected in our drinking water. For more information on PFAS contaminants, please consult <https://www.epa.gov/pfas/pfas-fact-sheets-and-infographics>

Contaminant	Unit Msmt	Level Detected	Contaminant	Unit Msmt	Level Detected
11CI-PF3OUdS (11-chloroeicosafuoro-3-oxaundecane-1-sulfonic acid)	ppb	ND	Perfluoroheptanoic acid	ppb	ND
9CI-PF3ONS (9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid)	ppb	ND	Perfluorohexanesulfonic acid	ppb	ND
ADONA (4,8-dioxa-3H-perfluorononanoic acid)	ppb	ND	Perfluorononanoic acid	ppb	ND
HFPO-DA (Hexafluoropropylene oxide dimer acidA)	ppb	ND	Perfluorooctanesulfonic acid	ppb	ND
NEtFOSAA (N-ethylperfluorooctanesulfonamidoacetic acid)	ppb	ND	Perfluorooctanoic acid	ppb	ND
NMeFOSAA (N-methylperfluorooctanesulfonamidoacetic acid)	ppb	ND	Perfluorotetradecanoic acid	ppb	ND
Perfluorobutanesulfonic acid	ppb	ND	Perfluorotridecanoic acid	ppb	ND
Perfluorodecanoic acid	ppb	ND	Perfluoroundecanoic acid	ppb	ND
Perfluorohexanoic acid	ppb	ND	Total PFAS	ppb	ND
Perfluorododecanoic acid	ppb	ND			

Drinking Water Test Results – Greensboro Utilities

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DETECTED DRINKING WATER CONTAMINANTS – Greensboro Utilities						
Contaminants	Violation Y/N	Level Detected	Unit Msmt	MCLG	MCL	Likely Source of Contamination
Alpha emitters	NO	2.1	PCI/l	0	15	Erosion of natural deposits
Copper	NO	0.265 * 0 > AL	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Nitrate (as Nitrogen)	NO	0.19-0.26	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Secondary Contaminants						
Aluminum	NO	ND-0.02	ppm	n/a	0.2	Erosion of natural deposits or as a result of treatment with water additives
Chloride	NO	3.60-4.10	ppm	n/a	250	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff
Hardness	NO	1.08-30.4	ppm	n/a	n/a	Naturally occurring in the environment or as a result of treatment with water additives
Iron	NO	ND-0.15	ppm	n/a	0.30	Naturally occurring in the environment; erosion of natural deposits; leaching from pipes
Manganese	NO	ND-0.01	ppm	n/a	0.05	Erosion of natural deposits; leaching from pipes
pH	NO	6.9-7.4	S.U.	n/a	n/a	Naturally occurring in the environment or as a result of treatment with water additives
Sodium	NO	ND-22.0	ppm	n/a	n/a	Naturally occurring in the environment
Sulfate	NO	4.60-4.60	ppm	n/a	250	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff
Total Dissolved Solids	NO	45.0-91.0	ppm	n/a	500	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff

* Figure shown is 90th percentile and # of sample sites exceeding Action Level (1.3 ppm) = 0

PFAS Contaminants – Greensboro Utilities

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 other industrial and consumer applications. The U.S. Environmental Protection Agency (EPA) has not established national primary drinking water regulations for PFAS substances. The lifetime health advisory level for PFOA and PFOS is a combined 70 parts per trillion, or 0.00007 mg/L. Below is a list of PFAS contaminants for which our system monitored in 2020 as required and the results of that monitoring. PFAS was *not* detected in our drinking water. For more information on PFAS contaminants, please consult <https://www.epa.gov/pfas/pfas-fact-sheets-and-infographics>

Contaminant	Unit Msmt	Level Detected	Contaminant	Unit Msmt	Level Detected
11CI-PF3OUdS (11-chloroeicosafuoro-3-oxaundecane-1-sulfonic acid)	ppb	ND	Perfluoroheptanoic acid	ppb	ND
9CI-PF3ONS (9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid)	ppb	ND	Perfluorohexanesulfonic acid	ppb	ND
ADONA (4,8-dioxa-3H-perfluorononanoic acid)	ppb	ND	Perfluorononanoic acid	ppb	ND
HFPO-DA (Hexafluoropropylene oxide dimer acidA)	ppb	ND	Perfluorooctanesulfonic acid	ppb	ND
NEtFOSAA (N-ethylperfluorooctanesulfonamidoacetic acid)	ppb	ND	Perfluorooctanoic acid	ppb	ND
NMeFOSAA (N-methylperfluorooctanesulfonamidoacetic acid)	ppb	ND	Perfluorotetradecanoic acid	ppb	ND
Perfluorobutanesulfonic acid	ppb	ND	Perfluorotridecanoic acid	ppb	ND
Perfluorodecanoic acid	ppb	ND	Perfluoroundecanoic acid	ppb	ND
Perfluorohexanoic acid	ppb	ND	Total PFAS	ppb	ND
Perfluorododecanoic acid	ppb	ND			

Definitions

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

Coliform Absent (ca)- Laboratory analysis indicates that the contaminant is not present.

Disinfection byproducts (DBPs)- are formed when disinfectants used in water treatment plants react with bromide and/or natural organic matter (i.e., decaying vegetation) present in the source water. Different disinfectants produce different types or amounts of disinfection byproducts. Disinfection byproducts for which regulations have been established include trihalomethanes (TTHM), haloacetic acids (HAA5), bromate, and chlorite.

Initial Distribution System Evaluation (IDSE)-a one-time study conducted by water systems to identify distribution system locations with high concentrations of trihalomethanes (THMs) and haloacetic acids (HAAs).

Locational Running Annual Average (LRAA)-yearly average of all the DPB results at each specific sampling site in the distribution system. The highest distribution site LRAA is reported in the Table of Detected Contaminants.

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

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

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

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 detection limits of lab equipment.

Not Reported (NR)-laboratory analysis, usually Secondary Contaminants, not reported by water system. EPA recommends secondary standards to water systems but does not require systems to comply.

Parts per billion (ppb) or Micrograms per liter (µg/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.

RAA-Running annual average

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. Water with less than 6.5 could be acidic, soft, and corrosive. A pH greater than 8.5 could indicate that the water is hard.

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

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

The following table is a list of *Primary Drinking Water Contaminants*, *Unregulated Contaminants*, and *Secondary Contaminants* for which our water system routinely monitors according to our regulatory schedule. These contaminants were *not* detected in your drinking water unless they are listed in the *Table of Detected Drinking Water Contaminants*.

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	TTHM [Total trihalomethanes]	80	ppb
cis-1,2-Dichloroethylene	70	ppb			
LIST OF SECONDARY CONTAMINANTS					
Alkalinity, Total (as CA, CO ₃)	Copper	Manganese	Specific Conductance		
Aluminum	Corrosivity	Odor	Sulfate		
Calcium, as Ca	Foaming agents (MBAS)	Nickel	Total Dissolved Solids		
Carbon Dioxide	Hardness	pH	Zinc		
Chloride	Iron	Silver			
Color	Magnesium	Sodium			
LIST OF UNREGULATED CONTAMINANTS					
Aldicarb	Chloroethane	Hexachlorobutadiene	Propachlor		
Aldicarb Sulfone	Chloroform	3-Hydroxycarbofuran	N-Propylbenzene		
Aldicarb Sulfoxide	Chloromethane	Isopropylbenzene	Propachlor		
Aldrin	O-Chlorotoluene	p-Isopropyltoluene	1,1,1,2-Tetrachloroethane		
Bromoacetic Acid	P-Chlorotoluene	M-Dichlorobenzene	1,1,2,2-Tetrachloroethane		
Bromobenzene	Dibromochloromethane	Methomyl	Tetrachloroethene		
Bromochloromethane	Dibromomethane	Methomyl	Trichloroacetic Acid		
Bromodichloromethane	1,1-Dichloroethane	Methylene chloride	1,2,3-Trichlorobenzene		
Bromoform	1,3-Dichloropropane	Methyl tert-butyl ether	Trichloroethene		
Bromomethane	2,2-Dichloropropane	Metolachlor	Trichlorofluoromethane		
Butachlor	1,1-Dichloropropene	Metribuzin	1,2,3-Trichloropropane		
N-Butylbenzene	1,3-Dichloropropene	MTBE	1,2,4-Trimethylbenzene		
Sec-Butylbenzene	Dicamba	Naphthalene	1,3,5-Trimethylbenzene		
Tert - Butylbenzene	Dichlorodifluoromethane	1-Naphthol			
Carbaryl	Dieldrin	Paraquat			