

# Annual Drinking Water Quality Report January—December 2020

**For more information about this report, or for any questions relating to your drinking water, please call Judy Sullivan, Manager, or Jeffrey White, Superintendent, at our office at (251) 981-4233.**

Last year, as in years past, your tap water met all U.S. Environmental Protection Agency (EPA) and the Alabama Department of Environmental Management (ADEM) drinking water health standards. Your Local Water officials vigilantly safeguard its water supplies and once again we are proud to report that our system has not violated a maximum contaminant level or any other water quality standards.

We're pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water.

The Orange Beach Water, Sewer, & Fire Protection Authority utilizes groundwater pumped from 8 wells; two of the wells are located on the island and six wells are located north of the canal. The water authority's storage capacity is ten million gallons, including a six-million-gallon tank on Hwy 161, a one-million-gallon tank at our office, a one-million-gallon tank on Canal Road, a one-million-gallon tank on Ono Island, and a one-million-gallon tank on Roscoe Road.

The treatment process consists of a series of steps. First, raw water is drawn from our well and sent to an aeration tank, which removes hydrogen sulfide, Carbon Dioxide, and also begins the oxidation process of iron and manganese, all of which exist naturally in groundwater. The water then goes into a mixing tank where soda ash (pH control) and chlorine (disinfection) are added. The water then travels through the filter system, which consists of layers of green sand, anthracite (coal), and gravel, where it undergoes an ion exchange process which removes all of the iron and manganese as well as filters out any fine particulates. Chlorine is then added for a second time as a precaution against any bacteria that may be introduced into the water distribution through breakage or maintenance and to prevent the growth of slime within the distribution lines. Also, added are Fluoride to prevent tooth decay and promote bone strength, zinc-orthophosphate (corrosion inhibitor), and soda ash (final pH adjustment). The water is now ready for consumption and is stored in large underground concrete structures from which it is pumped into the system and subsequently your homes and businesses.

## Important Drinking Water Definitions:

**Disinfection Byproducts** - contaminants formed when chlorine is used as a disinfectant.

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

**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.

**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 one penny in \$10,000,000,000,000.

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

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

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

**Variances & Exemptions** - ADEM or EPA permission not to meet an MCL or a treatment technique under certain conditions.

**Maximum Contaminant Level Goal or 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 or MCL** - 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 Residual Disinfectant Level Goal or 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.

**Maximum Residual Disinfectant Level or MRDL** - 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.

**Variances and Exemptions** - The Department or EPA permission not to meet an MCL or a treatment technique under certain conditions.

**Treatment Technique** - A required process intended to reduce the level of a contaminant in drinking water.

**Action Level** - The concentration of a contaminant that triggers treatment or other requirement a water system shall follow.

**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.

Orange Beach Water, Sewer, & Fire Protection Authority routinely monitors for contaminants in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2020. 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. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Orange Beach Water, Sewer, & Fire Protection Authority utilizes a Bacteriological Monitoring Plan, and a Cross Connection Policy is in place to insure good safe drinking water for our customers. The Orange Beach Water, Sewer, & Fire Protection Authority has completed a Source Water Assessment Plan which is available for review at their office. A Source Water Assessment Plan provides information about potential sources of contamination and is set up to help protect our source.

**We value your opinion!**

**Please attend our regularly scheduled meetings!**

**Every 3rd Thursday of each month at 5:00 p.m. at the Water Authority Office located at 25097 Canal Road, Orange Beach, Alabama, 36561.**

**Hope to See You There!**



## Table of Primary Contaminants

At high levels some primary contaminants are known to pose a health risks to humans. This table provides a quick glance of any primary contaminant detections.

CONTAMINANT	MCL	AMOUNT DETECTED	CONTAMINANT	MCL	AMOUNT DETECTED	CONTAMINANT	MCL	AMOUNT DETECTED
<b>Bacteriological</b>		<b>2019</b>	Selenium(ppb)	50	ND	Epichlorohydrin	TT	ND
Total Coliform Bacteria	< 5%	ND	Thallium(ppb)	2	ND	Ethylbenzene(ppb)	700	ND
Turbidity	TT	ND	<b>Organic Chemicals</b>		<b>2019</b>	Ethylene dibromide(ppt)	50	ND
Fecal Coliform & E. coli	0	ND	Acrylamide	TT	ND	Glyphosate(ppb)	700	ND
<b>Radiological</b>		<b>2019</b>	Alachlor(ppb)	2	ND	Haloacetic Acids(ppb) - (2017)	60	4.00
Beta/photon emitters (mrem/yr)	4	ND	Atrazine(ppb)	3	ND	Heptachlor(ppt)	400	ND
Alpha emitters (pci/l)	15	ND	Benzene(ppb)	5	ND	Heptachlor epoxide(ppt)	200	ND
Combined radium (pci/l)	5	1.18	Benzo(a)pyrene[PHAs](ppt)	200	ND	Hexachlorobenzene(ppb)	1	ND
Uranium(pci/l)	30	ND	Carbofuran(ppb)	40	ND	Hexachlorocyclopentadiene(ppb)	50	ND
<b>Inorganic</b>		<b>2019</b>	Carbon Tetrachloride(ppb)	5	ND	Lindane(ppt)	200	ND
Antimony (ppb)	6	ND	Chlordane(ppb)	2	ND	Methoxychlor(ppb)	40	ND
Arsenic (ppb)	10	ND	Chlorobenzene(ppb)	100	ND	Oxamyl [Vydate](ppb)	200	ND
Asbestos (MFL)	7	ND	2,4-D	70	ND	Pentachlorophenol(ppb)	1	ND
Barium (ppm)	2	ND	Dalapon(ppb)	200	ND	Picloram(ppb)	500	ND
Beryllium (ppb)	4	ND	Dibromochloropropane(ppt)	200	ND	PCBs(ppt)	500	ND
Bromate(ppb)	10	ND	0-Dichlorobenzene(ppb)	600	ND	Simazine(ppb)	4	ND
Cadmium (ppb)	5	ND	p-Dichlorobenzene(ppb)	75	ND	Styrene(ppb)	100	ND
Chloramines(ppm)	4	ND	1,2-Dichloroethane(ppb)	5	ND	Tetrachloroethylene(ppb)	5	ND
Chlorine(ppm)	4	ND	1,1-Dichloroethylene(ppb)	7	ND	Toluene(ppm)	1	ND
Chlorine dioxide(ppb)	800	ND	Cis-1,2-Dichloroethylene(ppb)	70	ND	TOC	TT	ND
Chlorite(ppm)	1	ND	trans-1,2-Dichloroethylene(ppb)	100	ND	TTHM(ppb) - (2017)	80	0.17
Chromium (ppb)	100	ND	Dichloromethane(ppb)	5	ND	Toxaphene(ppb)	3	ND
Copper (ppm)	AL=1.3	0.01	1,2-Dichloropropane(ppb)	5	ND	2,4,5-TP (Silvex)(ppb)	50	ND
Cyanide (ppb)	200	ND	Di-(2-ethylhexyl)adipate(ppb)	400	ND	1,2,4-Trichlorobenzene(ppb)	70	ND
Fluoride (ppm)	4	0.86	Di(2-ethylhexyl)phthalates(ppb)	6	ND	1,1,1-Trichloroethane(ppb)	200	ND
Lead (ppb)	AL=15	ND	Dinoseb(ppb)	7	ND	1,1,2-Trichloroethane(ppb)	5	ND
Mercury (ppb)	2	ND	Dioxin[2,3,7,8-TCDD](ppq)	30	ND	Trichloroethylene(ppb)	5	ND
Nitrate (ppm) - 2018	10	0.60	Diquat(ppb)	20	ND	Vinyl Chloride(ppb)	2	ND
Nitrite (ppm) - 2018	1	ND	Endothall(ppb)	100	ND	Xylenes(ppm)	10	ND
Total Nitrate & Nitrite	10	0.56	Endrin(ppb)	2	ND			

## Table of Secondary and Unregulated Contaminants

**Secondary Drinking Water Standards** are guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) drinking water. ADEM has Secondary Drinking Water Standards established in state regulations applicable to water systems required to monitor for the various components. **Unregulated contaminant** 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.

CONTAMINANT	MCL	DETECT	CONTAMINANT	MCL	DETECT	CONTAMINANT	MCL	DETECT
<b>Secondary</b>								
Aluminum	0.2	0.14	Foaming Agents	0.5	ND	Silver	7	ND
Chloride	250	4.40	Iron	0.3	0.56	Sulfate	70	6
Color (PCU)	15	5.00	Magnesium	75	ND	Total Dissolved Solids	500	20
Copper	1	ND	Odor (T.O.N.)	5	ND	Zinc	5	0.01
<b>Special</b>								
Calcium	N/A	ND	pH (SU)	N/A	6.90	Temperature (*C)	N/A	ND
Carbon Dioxide	N/A	ND	Sodium	N/A	4.90	Total Alkalinity	N/A	ND
Manganese	0.05	ND	Specific Conductance (umhos)	<500	ND	Total Hardness (as CaCO3)	N/A	9.9
<b>Unregulated</b>								
1,1 - Dichloropropene	N/A	ND	Bromobenzene	N/A	ND	Hexachlorobutadiene	N/A	ND
1,1,2,2-Tetrachloroethane	N/A	ND	Bromochloromethane	N/A	ND	Isopropylbenzene	N/A	ND
1,1-Dichloroethane	N/A	ND	Bromodichloromethane	N/A	1.21	M-Dichlorobenzene	N/A	ND
1,2,3 - Trichlorobenzene	N/A	ND	Bromoform	N/A	0.98	Methomyl	N/A	ND
1,2,3 - Trichloropropane	N/A	ND	Bromomethane	N/A	ND	Metolachlor	N/A	ND
1,2,4 - Trimethylbenzene	N/A	ND	Butachlor	N/A	ND	Metribuzin	N/A	ND
1,2,4-Trichlorobenzene	N/A	ND	Carbaryl	N/A	ND	MTBE	N/A	ND
1,3 - Dichloropropane	N/A	ND	Chloroethane	N/A	ND	N - Butylbenzene	N/A	ND
1,3 - Dichloropropene	N/A	ND	Chlorodibromomethane	N/A	2.00	Naphthalene	N/A	ND
1,3,5 - Trimethylbenzene	N/A	ND	Chloroform	N/A	0.61	N-Propylbenzene	N/A	ND
2,2 - Dichloropropane	N/A	ND	Chloromethane	N/A	ND	O-Chlorotoluene	N/A	ND
3-Hydroxycarbofuran	N/A	ND	Dibromochloromethane	N/A	ND	P-Chlorotoluene	N/A	ND
Aldicarb	N/A	ND	Dibromomethane	N/A	ND	P-Isopropyltoluene	N/A	ND
Aldicarb Sulfone	N/A	ND	Dichlorodifluoromethane	N/A	ND	Propachlor	N/A	ND
Aldicarb Sulfoxide	N/A	ND	Dieldrin	N/A	ND	Sec - Butylbenzene	N/A	ND
Aldrin	N/A	ND	Fluorotrichloromethane	N/A	ND	Tert - Butylbenzene	N/A	ND
<b>PFAS Compounds</b>								
CONTAMINANT	RESULTS	UNITS	CONTAMINANT	RESULTS	UNITS	CONTAMINANT	RESULTS	UNITS
11CI-PF3OUs	ND	ug/L	Perfluorodecanoic Acid	ND	ug/L	Perfluorooctanoic Acid	ND	ug/L
9CI-PF3ONS	ND	ug/L	Perfluorohexanoic Acid	ND	ug/L	Perfluorotetradecanoic Acid	ND	ug/L
ADONA	Cu	ug/L	Perfluorododecanoic Acid	ND	ug/L	Perfluorotridecanoic Acid	ND	ug/L
HFPO-DA	ND	ug/L	Perfluoroheptanoic Acid	ND	ug/L	Perfluoroundecanoic Acid	ND	ug/L
NEIFOSAA	ND	ug/L	Perfluorohexanesulfonic Acid	ND	ug/L	Total PFAs	ND	ug/L



The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or ADEM requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently.

Table of Detected Drinking Water Contaminants									
CONTAMINANT									
MCLG		MCL		Range		Amount Detected		Likely Source of Contamination	
Bacteriological Contaminants									
2020									
Total Coliform Bacteria	0	< 5%	ND	Present or Absent	Naturally present in the environment	NTU	Soil runoff	ND	Present or Absent
Turbidity	0	0	TT	ND	Present or Absent	Human and animal fecal waste	Human and animal fecal waste	ND	Present or Absent
Fecal Coliform & E. coli	0	0	0	Present or Absent	Human and animal fecal waste	Human and animal fecal waste	Human and animal fecal waste	ND	Present or Absent
Viruses, Giardia	0	0	TT	0	Present or Absent	Found naturally in water, multiplies in heating systems	Found naturally in water, multiplies in heating systems	0	Present or Absent
Legionella	0	0	TT	0	Present or Absent	Found naturally in water, multiplies in heating systems	Found naturally in water, multiplies in heating systems	0	Present or Absent
Radiological Contaminants									
2020									
Decay of natural and man-made deposits	ND	inrem/yr	ND	inrem/yr	Decay of natural and man-made deposits	pCi/L	Erosion of natural deposits	ND	pCi/L
Beta particle and photon	0	4	ND	0.86	Water additive which promotes strong leech; erosion of natural deposits; discharge from fertilizer and aluminum factories	ppm	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	0.01	ppm
Copper	1.3	10 Sites AL=1.3	No. of Sites above action level	0	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	ppm	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	0.01	ppm
Fluoride	4	4	ND	0.86	Water additive which promotes strong leech; erosion of natural deposits; discharge from fertilizer and aluminum factories	ppm	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	0.01	ppm
Lead	0	10 Sites AL=15	No. of Sites above action level	0	Corrosion of household plumbing systems; erosion of natural deposits	pbb	Corrosion of household plumbing systems; erosion of natural deposits	ND	pbb
Nitrate (as N)	10	10	ND	0.60	Septic tanks, sewage; erosion of natural deposits	ppm	Septic tanks, sewage; erosion of natural deposits	0.60	ppm
Nitrite (as N)	1	1	ND	ND	Septic tanks, sewage; erosion of natural deposits	ppm	Septic tanks, sewage; erosion of natural deposits	ND	ppm
Total Nitrate & Nitrite	10	10	ND	0.56	Septic tanks, sewage; erosion of natural deposits	ppm	Septic tanks, sewage; erosion of natural deposits	0.56	ppm
Organic Contaminants									
2020									
Halacetic Acids (HAA5)	0	60	ND	4.00	By-product of chlorination	pbb	By-product of chlorination	4.00	pbb
Total trihalomethanes (TTHM)	0	80	5.00	0.17	By-product of chlorination	pbb	By-product of chlorination	0.17	pbb
Secondary Contaminants									
2020									
Chloride	N/A	250	ND	4.40	Naturally occurring in the environment or as a result of agricultural runoff	ppm	Naturally occurring in the environment or as a result of agricultural runoff	4.40	ppm
Color	N/A	15	ND	5.00	Naturally occurring in the environment or as a result of treatment with water additives	PCU	Naturally occurring in the environment or as a result of treatment with water additives	5.00	PCU
Sulfate	N/A	250	ND	6.00	Naturally occurring in the environment	ppm	Naturally occurring in the environment	6.00	ppm
Total Dissolved Solids	N/A	500	ND	20.00	Erosion of natural deposits	ppm	Erosion of natural deposits	20.00	ppm
Zinc	N/A	5	ND	0.02	Erosion of natural deposits	ppm	Erosion of natural deposits	0.02	ppm
Special Contaminants									
2020									
pH	N/A	N/A	ND	6.90	Naturally occurring in the environment or as a result of treatment with water additives	SU	Naturally occurring in the environment or as a result of treatment with water additives	6.90	SU
Sodium	N/A	N/A	ND	4.90	Naturally occurring in the environment	ppm	Naturally occurring in the environment	4.90	ppm
Total Hardness (as CaCO3)	N/A	N/A	ND	9.90	Naturally occurring in the environment or as a result of treatment with water additives	ppm	Naturally occurring in the environment or as a result of treatment with water additives	9.90	ppm
Unregulated Contaminants									
2020									
Bromodichloromethane	N/A	1.21	-	1.21	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff; by-product of chlorination	ppb	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff; by-product of chlorination	1.21	ppb
Bromoform	N/A	0.98	-	0.98	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff; by-product of chlorination	ppm	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff; by-product of chlorination	0.98	ppm
Chlorodibromomethane	N/A	2.00	-	2.00	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff; by-product of chlorination	ppb	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff; by-product of chlorination	2.00	ppb
Chloroform	N/A	0.61	-	0.61	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff; by-product of chlorination	ppb	Naturally occurring in the environment or as a result of industrial discharge or agricultural runoff; by-product of chlorination	0.61	ppb
Unregulated Contaminant Rule 4 (UCMR4) Contaminants Detected 2019-2020									
Level Detected									
Unit Mism.									
Manganese	0.74								ppb
Quinoline	0.5								ppb
Bromide	33.8								ppb
Bromochloroacetic acid	1.30-1.87								ppb
Bromodibromochloroacetic acid	0.76-1.30								ppb
Chlorodibromochloroacetic acid	0.50-0.89								ppb
Dibromochloroacetic acid	0.67-1.41								ppb
Dichloroacetic acid	1.23-1.64								ppb
Trichloroacetic acid	ND-0.78								ppb
Monobromochloroacetic acid	ND - 0.31								ppb



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Permit No. 1

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, 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.

### A MESSAGE TO OUR CUSTOMERS

Thank you for allowing us to continue providing your family with clean, quality water this year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit all of our customers. These improvements are sometimes reflected as rate structure adjustments. Thank you for understanding. We at The Orange

Beach Water, Sewer, & Fire Protection Authority work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.

Judy Sullivan, Manager

### Consumer Confidence Report Prepared By The Alabama Rural Water Association

#### General Information

Due to Hurricane Sally, the Orange Beach Water, Sewer and Fire Protection Authority incurred a reporting violation on Disinfection Byproducts (DBP) and Synthetic Organic Chemicals (SOC) as a result from a failure to submit the July 2020 – September 2020 results to ADEM within the first 10 days following the deadline of October 10, 2020.

As you can see by the tables, our system had no monitoring violations of allowable limits of contaminants in drinking water. We're proud that your drinking water meets or exceeds all Federal and State requirements. We have learned through our monitoring and testing that some contaminants have been detected. The EPA has determined that your water is SAFE at these levels.

**Total Coliform:** The Total Coliform Rule requires water systems to meet a stricter limit for coliform bacteria. Coliform bacteria are usually harmless, but their presence in water can be an indication of disease-causing bacteria. When coliform bacteria are found, special follow-up tests are done to determine if harmful bacteria are present in the water supply. If this limit is exceeded, the water supplier must notify the public by newspaper, television or radio. To comply with the stricter regulation, we have increased the average amount of chlorine in the distribution system.

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.

Some people may be more vulnerable to contaminants in drinking water than the general population. People who are immuno-compromised 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 high 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 Cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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. Orange Beach Water, Sewer, & Fire Protection Authority 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>.