



CITY OF TUSCALOOSA WATER AND SEWER DEPARTMENT

2005

ANNUAL WATER QUALITY REPORT



Office Address and Telephone Number

**City of Tuscaloosa
Ed Love Water Plant
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Tuscaloosa, Alabama 35404-1056
Telephone (205) 349-0247
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<http://www.ci.tuscaloosa.al.us>

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**Office Hours:
7:00 a.m. to 3:30 p.m.**

THE SAFE DRINKING WATER ACT... What Does It Mean For You?

The Safe Drinking Water Act (SDWA) was signed into law on December 16, 1974. The purpose of the law is to assure that the nation's water supply systems serving the public meet minimum national standards for the protection of public health.

The SDWA directed the U.S. Environmental Protection Agency (EPA) to establish national drinking water standards. 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA Safe Drinking Water Hotline 800-426-4791 or EPA's website address www.epa.gov/safewater.

The 1996 amendments to the SDWA contained extensive provisions for consumer involvement and right-to-know. The Consumer Confidence Report or Annual Water Quality Report is the centerpiece of public right-to-know in SDWA. The amendments created the need for this report showing consumers the detected amounts of contaminants and the plain language definitions shown in this pamphlet.

The amendments recognized that some people might 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 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 microbial contaminants are available from the Safe Drinking Water Hotline 800-426-4791.

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 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 runoff, 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 runoff, and residential uses.

- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts 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.

PLAIN LANGUAGE DEFINITIONS

1. 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.
2. 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.

3. 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.
4. 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.
5. Treatment Technique or TT: A required process intended to reduce the level of a contaminant in drinking water.
6. Action Level or AL: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

In the following tables on the next two pages you may find terms and abbreviations that may not be familiar to you. To help you better understand these terms we have provided the following definitions.
 mg/L equals milligrams per liter or parts per million

µg/L equals micrograms per liter or parts per billion

ng/L equals nanograms per liter or parts per trillion

n/a - not applicable - nd - not detected pCi/L equals picocuries per liter, a measure of radiation

NTU equals Nephelometric Turbidity Units CFU equals Colony Forming Units

WATER QUALITY REPORT							
PRIMARY DRINKING WATER PARAMETERS							
WATER SOURCE LAKE TUSCALOOSA							
DETECTED CONTAMINANTS							
MICROBIOLOGICAL							
All results meet or surpass Federal Drinking Water Regulations							
Period Covered: 12 Months Ending December, 2004	Units	MCL	MCLG	Highest Level in Distribution System	Range of detections	Violation (Yes/No)	Major Sources in Drinking Water
Total Coliform Bacteria	Presence of total coliform bacteria in <5% of the 120 required monthly samples		0	Coliform Present in 1.2% of samples	Not detected - 1.2% CP	No	Naturally present in the environment
Fecal Coliform/ <i>E. coli</i>	0		0	<i>E. coli</i> present in 1 sample out of 2,570 samples	Not detected - 1 ECP	No	Human and animal fecal waste
Total Organic Carbon	mg/L	TT	n/a	2.0	1.2 - 2.0	No	Naturally present in the environment
Turbidity	NTU	TT	n/a	0.177	0.028 - 0.177	No	Soil Runoff
RADIOLOGICAL							
All results meet or surpass Federal Drinking Water Regulations							
Gross Alpha	pCi/L	15	0	0.5±0.4	0.2±0.5 - 0.5±0.4	No	Erosion of natural deposits
INORGANIC CHEMICALS							
All results meet or surpass Federal Drinking Water Regulations							

Fluoride as F ⁻	mg/L	4	4	1.3	0.394 - 1.3	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizers and aluminum factories
Nitrate as NO ₃ ⁻ -N	mg/L	10	10	0.46	0.15 - 0.46	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sulfate as SO ₄	mg/L	50	50	37.0	19.7 - 37.0	No	Erosion of natural deposits.
DISINFECTION BY-PRODUCTS							
All results meet or surpass Federal Drinking Water Regulations							
Period Covered: 12 Months Ending December, 2004	Units	MCL	MCLG	Highest Level in Distribution System	Range of detections	Violation (Yes/No)	Major Sources in Drinking Water
Haloacetic Acids	µg/L	60	n/a	18.3	18.3 - 49.4	No	By-product of drinking water chlorination
The sum of Dibromoacetic, Dichloroacetic, Monobromoacetic, Monochloroacetic, & Trichloroacetic Acids annual average MCL equal to or less than 60 µg/L.							
Total Trihalomethanes	µg/L	80	n/a	40.9	9.93 - 91.0	No	By-product of drinking water chlorination
The sum of Chloroform, Bromodichloromethane, Dibromochloromethane & Bromoform annual average MCL equal to or less than 80 µg/L.							
Chlorine as Cl ₂	mg/L	4	4	3.5	0.2 -3.5	No	Water additive used to control microbes
LEAD AND COPPER PRIMARY MONITORING							
All results meet or surpass Federal Drinking Water Regulations							
Period Covered: 12 Months Ending December, 2004	Units	MCL	MCLG	Highest Level in Distribution System	Range of detections	Violation (Yes/No)	Major Sources in Drinking Water
Lead as Pb	mg/L	AL= 0.015	0	0.059	nd - 0.059	No	Corrosion of household plumbing system; Erosion of natural deposits
Copper as Cu	mg/L	AL= 1.3	1.3	0.910	nd - 0.91	No	Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives
There were no violations as greater than 90% of samples were below the action level.							
ORGANIC CHEMICALS							
UNREGULATED CONTAMINANTS							
All results meet or surpass Federal Drinking Water Regulations							
Period Covered: 12 Months Ending December, 2004	Units	MCL	MCLG	Highest Level in Distribution System	Range of detections	Violation (Yes/No)	Major Sources in Drinking Water
Bromodichloromethane	µg/L	n/a	n/a	8.77	4.35 - 8.77	No	By-Product of drinking water chlorination
Chloroform	µg/L	n/a	n/a	24.6	12.2 - 24.6	No	By-Product of drinking water chlorination
Dibromochloromethane	µg/L	n/a	n/a	2.03	0.85 - 2.03	No	By-Product of drinking water chlorination

WATER QUALITY REPORT

PRIMARY DRINKING WATER PARAMETERS WATER SOURCE LAKE TUSCALOOSA

INORGANIC CHEMICALS

All results meet or surpass Federal Drinking Water Regulations

Period Covered: 12 Months Ending December, 2004	Units	MCL	MCLG	Highest Level During Last 12 Months	Range of detections	Violation (Yes/No)	Major Sources in Drinking Water
Antimony as Sb	µg/L	6	6	nd	nd	No	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic as As	µg/L	50	0	nd	nd	No	Erosion of natural deposits; Runoff from orchards, glass & electronics production wastes
Barium as Ba	mg/L	2	2	nd	nd	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Beryllium as Be	µg/L	4	4	nd	nd	No	Discharge from metal refineries & coal burning factories; Discharge from electrical, aerospace, & defense industries
Cadmium as Cd	µg/L	5	5	nd	nd	No	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; Runoff from waste batteries & paints
Chromium as Cr	µg/L	100	100	nd	nd	No	Discharge from steel & pulp mills; Erosion of natural deposits
Cyanide as Cn	µg/L	200	200	nd	nd	No	Discharge from steel/metal factories; Discharge from plastic & fertilizer factories.
Lead as Pb	µg/L	15	0	nd	nd	No	Corrosion of household plumbing systems; Erosion of natural deposits
Mercury as Hg	µg/L	2	2	nd	nd	No	Erosion of natural deposits; Discharge from refineries & factories; Runoff from landfills; Runoff from cropland
Nitrite as NO ₂ --N	mg/L	1	1	nd	nd	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Selenium as Se	µg/L	50	50	nd	nd	No	Discharge from petroleum & metal refineries; Erosion of natural deposits; Discharge from mines
Thallium as Tl	µg/L	2	0.5	nd	nd	No	Leaching from ore-processing sites; Discharge from electronics, glass, & drug factories

SECONDARY INORGANICS

All results meet or surpass Federal Drinking Water Regulations

Period Covered: 12 Months Ending December, 2004	Units	MCL	MCLG	Highest Level During Last 12 Months	Range of detections	Violation (Yes/No)	Major Sources in Drinking Water
Alkalinity, Total as CaCO ₃	mg/L	*	*	32.1	21.3 - 32.1	No	Erosion of natural deposits
Aluminum as Al	µg/L	200 State Reg n/a EPA reg	*	14	nd - 14	No	Water additive for removing organics; Erosion of natural deposits
Calcium as Ca	mg/L	*	*	18.2	14.1 - 18.2	No	Erosion of natural deposits
Chloride as Cl	mg/L	250	*	8.60	5.40 - 8.60	No	n/a
Copper as Cu	mg/L	AL 1.3	1.3	nd	nd	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

Hardness, Calcium as CaCO3	mg/L	*	*	45.4	35.2 - 45.4	No	Erosion of natural deposits
Hardness, Total as CaCO3	mg/L	*	*	60.5	44.5 - 60.5	No	Erosion of natural deposits
Magnesium as Mg	mg/L	*	*	2.84	2.26 - 2.84	No	Erosion of natural deposits
Ortho-polyphosphate	mg/L	*	*	0.61	0.44 - 0.61	No	Water additive for corrosion control
pH	Units	*	*	9.06	7.89 - 9.06	No	n/a
Silver as Ag	mg/L	0.1	*	nd	nd	No	Erosion of natural deposits
Sodium as Na	mg/L	*	*	7.14	3.67 - 7.14	No	Erosion of natural deposits
Total Dissolved Solids	mg/L	500	*	120	80 - 120	No	Erosion of natural deposits
Zinc as Zn	mg/L	5	*	nd	nd	No	Erosion of natural deposits
* No MCL or MCLG established at this time.							

IS MY WATER SAFE?

Last year, as in years past, your tap water met all U.S. Environmental Protection Agency or EPA and Alabama Department of Environmental Management or ADEM's Drinking Water Health Standards.

Your City of Tuscaloosa Water Department Staff vigilantly safeguards its water supplies with constant monitoring. Once again we are proud to report that our drinking water has never violated a maximum contaminant level or any other of the water quality standards.

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.

WHAT IS THE SOURCE OF OUR DRINKING WATER?

Lake Tuscaloosa is Tuscaloosa's primary surface water supply source for drinking water. Lake Tuscaloosa is a 5,885-acre impoundment of North River and several major creeks. This beautiful man-made lake holds about 55 billion gallons of excellent quality water. Lake Nicol and Harris Lake are our alternate sources of water. Currently, Harris Lake is used for industrial water.

The City of Tuscaloosa has completed the required Source Water Assessment and has published the data. A copy of the data may be viewed at the City of Tuscaloosa Water & Sewer Department's Office at 2201 University Blvd., 2nd floor.

Lake Tuscaloosa's watershed is comprised of a large portion of three counties. Every activity in the watershed has an impact on the quality of our Lake Tuscaloosa, which is our source of drinking water. **Our Great Lake - Lake Tuscaloosa - Protect. Preserve. Play.**

WHAT CAN I DO TO PROTECT OUR SOURCE OF DRINKING WATER?

Lake Tuscaloosa as our primary source of drinking water needs to be protected by every individual who drinks and enjoys the water, as well as those who live or travel in the watershed!!!

Several tips to help protect our source water are:

- Recycle and dispose of used oil, paints, etc. properly by calling Recycled Oil Saves Energy (ROSE) for oil at 348-4878.
- Reduce the polluted run-off of septic tanks by having the tanks serviced and pumped out regularly and give the certificate of service to the Lakes Division.
- Reduce the polluted run-off of herbicides, pesticides, fertilizers, and etc. by not over applying or applying when it is going to rain.
- Adopt-a-stream or creek segment and help to restore and preserve.
- If you see someone dumping pollutants or anything into any of the lakes, please call the City of Tuscaloosa Lakes Division Manager at (205) 349-0279 or the Ed Love Water Plant at (205)349-0247. Be prepared to give location and description of incident.
- Check out our web site at www.ourgreatlake.org for all the latest reports and information on our lake.

WHAT TREATMENT TECHNIQUES ARE USED TO TREAT MY WATER?

The raw water from Lake Tuscaloosa is gravity fed approximately two miles to the Raw Water Pumping Station, which is a quarter of a mile from the Ed Love Water Plant. The raw water is pumped into a raw water flash mixer where aluminum sulfate and lime are added for coagulation and potassium permanganate is added when necessary for removal of iron and manganese for taste and odor control.

Next, the water flows through four flocculators and four settling basins. The water is then filtered through multi-media filters, lime is added for pH and corrosion control, chlorine is added for disinfection, fluoride is added for the prevention of tooth decay, and ortho-polyphosphate is added for corrosion control. At this point, the water is pumped into the Distribution System, which consists of nine booster pump stations and thirteen storage tanks.

The Ed Love Water Plant, which is named after former superintendent Ed E. Love, is a multi-million dollar facility. The plant is maintained by 31 full-time employees. These employees are responsible for the highest quality water possible for 190,000 customers. The treatment of the water is skillfully handled by our manager, a chief operator, two biologist, a chemist, a secretary, five shift operators, one operator trainee, three maintenance operators, one electronics technician, two solids operators, two maintenance operator assistants, and ten operator assistants. The Ed Love Water Plant is operated and maintained 24 hours a day, 365 days a year, which includes weekends and all holidays.

The City's most valuable asset is its excellent quality of water! Because of this excellent quality, numerous industries and businesses have selected Tuscaloosa as their home.

Water Mains in Service.....	543 Miles
Water Storage Tanks.....	13 Tanks
Water Booster Pump Stations.....	9 Stations
Water Storage Capacity.....	25.4 Million Gallons
Water Treatment Capacity.....	45.7 Million Gallons Per Day
Public Fire Hydrants.....	2,878 Hydrants

The Ed Love Water Treatment Plant has been an award winning plant for the last eight years. The Alabama Water and Pollution Control Association, based on recommendations of a peer review committee, presents the awards annually. They are given in recognition of outstanding operations achieved by the operators of the plant.

The City is currently in the final stages of developing plans for a new water plant to facilitate the tremendous growth of our area. The plant is to be built on the north side of the river near the Lake Tuscaloosa Dam. The projected completion date for this new plant is late 2007. The City is also moving forward on a plan to purchase a Supervisory Control Acquisition Data Administration or SCADA system for the entire Water & Sewer System and upgrading the security system for the Water Department. The SCADA system should be installed and fully functional by December 2005.

WATER AND SEWER DEPARTMENT

Maurice T. Sledge, Director

Post Office Box 2090

Tuscaloosa, AL 35403-2090

The Tuscaloosa City Council Meetings are held twice a week, every week in City Council Chambers on second floor of Tuscaloosa City Hall. The address is 2201 University Blvd. and the meeting times are, Tuesday 8:30 AM and Thursday 6:00 PM. The Agenda for every meeting is published in the Tuscaloosa News on Saturday and Thursday and on the internet at www.ci.tuscaloosa.al.us or you may call 205-349-0499.

**Water Billing Office
Turn On/Turn Off**

Office Hours:
8:00 a.m. – 4:00 p.m.

Monday – Friday
(205) 349-0230

**Ed E. Love Water Plant
Drinking Water Plant**

Office Hours:
7:00 a.m. – 3:30 p.m.

Monday – Friday
(205) 349-0247

**Distribution Division
Line Breaks/Leaks**

Office Hours:
7:00 a.m. – 3:30 p.m.

Monday – Friday
(205) 349-0280

Lakes Division

Source Division

Office Hours:
7:00 a.m. – 3:30 p.m.
Monday – Friday
(205) 349-0279

Hilliard N. Fletcher

Wastewater Plant

Office Hours:
7:00 a.m. – 3:30 p.m.
Monday – Friday
(205) 349-0273