



DUCK RIVER UTILITY COMMISSION

2006 WATER QUALITY REPORT

UTILITY INFORMATION

The Duck River Utility Commission is a regional water authority that provides ultra-pure and plentiful water to Manchester, Tullahoma and portions of the surrounding counties. The DRUC is a government agency formed in 1976 and operates a state-of-the-art water filtration plant and other facilities on Normandy Reservoir. The DRUC facilities are operated twenty-four hours a day by State certified personnel producing up to ten million gallons of pure water each day.

WATER SOURCE

The DRUC water treatment plant withdraws water from Normandy Reservoir, constructed by TVA in 1976, which is filled by flow from the Duck River. The DRUC, TVA and the Tennessee Department of Environment and Conservation (TDEC) are actively working to protect the reservoir from sources of pollution and assess vulnerability to potential contamination. The TDEC has prepared a Source Water Assessment Program (SWAP) report that assesses the susceptibility of Normandy Reservoir to *potential* contamination and it has been rated as reasonably susceptible (high) based on geological factors and human activities in the vicinity of the reservoir. An explanation of Tennessee's Source Water Assessment Program, the Source Water Assessment summaries, susceptibility scoring and the overall TDEC report to the USEPA can be viewed online at www.state.tn.us/environment/dws/dwassess.php or you may contact the DRUC or TDEC at 1-888-891-TDEC to obtain copies of specific assessments. In addition, the DRUC has implemented a number of security measures, including 24-hour surveillance and alarms at our facilities to protect against vandalism and other forms of attack.

THE TREATMENT PROCESS

The DRUC water treatment plant utilizes advanced water treatment technology to remove both particulate matter and dissolved compounds from the water before it is disinfected and pumped to the distribution system. The reservoir water entering the facility is first oxidized and disinfected by the injection of chlorine dioxide. Traditional pretreatment with gaseous chlorine was discontinued in 1988 in favor of chlorine dioxide that does not create certain regulated byproducts. After oxidation and disinfection, particulate matter is coagulated using aluminum sulfate. The "alum" causes the particles in the water to stick to each other, increasing the overall size and weight of the particles. The water then moves into settling basins where these new larger particles sink to the bottom and are removed. The clarified water then travels into the filter building where the water is vacuumed through hollow fiber ultrafiltration membranes and then through eight huge granular activated carbon contactors. These new filters are designed to remove all remaining particulate matter, even particles smaller than a bacteria or virus. The GAC contactors absorb any remaining organic compounds that can cause objectionable tastes and odors. After charcoal filtration, the water is pH neutralized and a chlorine disinfectant residual is added before the water is pumped to the distribution system. Fluoride is also added to prevent tooth decay at the State required level of one part per million.

ATTENCION

Este informe contiene información muy importante. Tradúscalo o hable con alguien que lo entienda bien.

CUSTOMER COMMITMENT

The DRUC is committed to producing safe and reliable water for all of our customers' needs. The DRUC is proud to report that the water produced by the filtration plant met all federal and state standards for drinking water during 2005. In fact, the DRUC has never violated any EPA or State standard or regulation since it was formed in 1976.

The Commission is also very proud of the 99.8% average score achieved on inspections by the Tennessee Division of Water Supply over the last 15 years. The Commission employs a full time staff to manage, operate and monitor both lake and production water quality including environmental engineers, biologists/chemists and certified water treatment plant operators. Thousands of tests are conducted each month on water samples at the treatment plant and throughout the distribution systems to ensure that the water remains safe and pure at all times. Over the past ten years the DRUC has invested over \$15,000,000 in state-of-the-art technology and upgrades to the treatment facilities to improve both quality and reliability. The DRUC also operates a certified laboratory at the water treatment plant, analyzing water samples for other utilities as well as the public.

REQUIRED INFORMATION FROM THE US EPA

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). The sources of drinking water (both bottled water and tap water) include rivers, lakes, streams, reservoirs, ponds, 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.

VULNERABLE POPULATIONS

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. These people should seek advice about food preparation, sanitation and handling of infants or pets as well as 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 toll free at (800-426-4791) or on the Internet at www.epa.gov/ogwdw.

INFORMATION AND INVOLVEMENT

For more information about this report or other water quality questions, contact the DRUC at (931) 455-6458 or the Internet at www.druc.org or by email at manager@druc.org. The Duck River Utility Commission meets on the third Wednesday of every month at 6:00 pm at the DRUC offices near Tullahoma, Tennessee. The Public is always welcome to participate.

DUCK RIVER UTILITY COMMISSION

2005 WATER QUALITY DATA

QUALITY ASSURANCE

In order to ensure that tap water is safe, the U.S. Environmental Protection Agency prescribes regulations that require utilities to monitor regularly for numerous substances in the water it produces. An independent laboratory certified by the EPA and the State of Tennessee performs this testing. All testing is conducted in compliance with current regulations. **The water produced by the DRUC has never exceeded the limits for any regulated compound or substance as established by the State of Tennessee or U. S. EPA.**

TEST RESULTS – NONE DETECTED

Analysis has been routinely performed for the following list of regulated substances and **NONE** were detected in the drinking water.

<i>PRIMARY ORGANICS</i>	<i>VOLATILE ORGANICS</i>	<i>VOLATILE ORGANICS</i>	<i>INORGANICS</i>	<i>SYNTHETIC ORGANICS</i>	<i>SYNTHETIC ORGANICS</i>
Alachlor	Bromobenzene	Dichloropropane	Arsenic	Carbofuran	Metolachlor
Atrazine	Bromochloromethane	Dichloropropene	Antimony	Chlordane	Metribuzin
Benzene	Bromodichloromethane	Ethylbenzene	Beryllium	Dalapon	Oxamyl
CarbonTetrachloride	Bromomethane	Fluorotrichloromethane	Cadmium	Dicamba	PCB 1016
Dichloroethane	Butylbenzene	Hexachloro-1,3-butadiene	Chromium	Dieldrin	PCB 1221
Dichloroethylene	Chlorobenzene	Isopropylbenzene	Cyanide	Dinoseb	PCB 1232
Endrin	Chlorodibromomethane	p-Isopropyltoluene	Mercury	Di(2-ethylhexyl)adipate	PCB 1242
Lindane	Chloroethane	Naphthalene	Nickel	Di(2-ethylhexyl)phthalate	PCB 1248
Methoxychlor	Chloromethane	n-Propylbenzene	Selenium	2,3,7,8-TCDD (Dioxin)	PCB 1254
Paradichlorobenzene	o-Chlorotoluene	Styrene	Thallium	Endothall	PCB 1260
Toxaphene	p-Chlorotoluene	Tetrachloroethane	<i>SYNTHETIC ORGANICS</i>	Ethylene dibromide	Pentachlorophenol
Trichloroethane	Dibromomethane	Tetrachloroethylene		Glyphosate	Picloram
Trichloroethylene	m-Dichlorobenzene	Toluene	Aldicarb Sulfone	Heptachlor	Propachlor
VinylChloride	o-Dichlorobenzene	Trichlorobenzene	Aldicarb Sulfoxide	Heptachlorepoxyde	Simazine
2,4-D	Dichlorodifluoromethane	Trichloroethane	Aldrin	Hexachlorobenzene	<i>RADIONUCLIDES</i>
2,4,5-TP (Silvex)	Dichloroethane	Trichloropropane	Butachlor	Hexachlorocyclopentadiene	
<i>ASBESTOS</i>	Dichloroethylene	Trimethylbenzene	Benzo(a)pyrene	3-Hydroxycarbofuran	Radium 226
Asbestos Fibers	Dichloromethane	Xylene	Carbaryl	Methomyl	Radium 228

TEST RESULTS – REQUIRED REPORTING AND DETECTED COMPOUNDS

The following water quality analysis and testing information is required reporting or are substances that were detected in the drinking water. All of the substances that were detected are present at levels well below the U. S. EPA limits and do not pose a health risk to the general public.

Substance (units)	EPA Limit (MCL)	DRUC Maximum	DRUC Range	EPA Goal (MCLG)	Possible Source of the Contaminant
Microbial Contaminants					Very small organisms such as bacteria
Total Coliform (# Positive)	< 2	0	0	0	Naturally present in the environment
Fecal Coliform & E. Coli (# Positive)	0	0	0	0	Human and animal fecal waste
Total Organic Carbon (ppm)*	TT*	1.7	1.0 - 1.7	N/A	Naturally present in the environment
Turbidity (NTU)*	TT*	0.12	0.02 - 0.12	N/A	Turbidity does not present any risk to your health and is measured to assess the effectiveness of the filtration system.
Inorganic Compounds					Substances of mineral origin
Barium (ppm)	2	0.024	0.024	2	Natural Erosion, drilling wastes, metal refinery waste
Chlorine (ppm)	MRDL = 4	1.97	0.30 - 1.97	MRDLG = 4	Water additive used to control microbes
Chlorine Dioxide (ppb)	800	710	0 - 710	800	Water additive used to control microbes
Chlorite (ppm)	1	0.59	0.10 - 0.59	0.80	Byproduct of drinking water chlorination
Fluoride (ppm)	4	0.99	0.85 - 0.99	4	Added to prevent tooth decay, natural erosion
Nitrate (ppm)	10	0.22	0.22	10	Agricultural runoff, natural erosion, sewage discharge
Sodium (ppm)	N/A	4.7	3.1 - 4.7	N/A	Natural erosion, component of water additives
Copper (ppm)	None of 30 samples exceeded action limit AL = 1.3	0.56	0.03 - 0.56	1.3	Corrosion of household plumbing, - 2005 Data
Lead (ppb)	None of 30 samples exceeded action limit AL = 15	8.3	0.5 - 8.3	0	Corrosion of household plumbing, - 2005 Data
Organic Compounds					Natural or synthetic carbon based compounds
Haloacetic Acids Total (ppb)	60	30	15 - 43	0	Byproduct of drinking water chlorination
Trihalomethanes Total (ppb)	80	36	20 - 55	0	Byproduct of drinking water chlorination

DEFINITIONS: **MCL:** Maximum Contaminant Level, or 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, or 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. **MRDL:** Maximum Residual Disinfectant Level, or the highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for the control of microbial contaminants. **MRDLG:** Maximum Residual Disinfectant Level Goal, or 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 the disinfectants to control microbial contaminants. **NTU:** Nephelometric Turbidity Unit; a measure of particles in the water. **ppb:** Parts per billion or micrograms per liter. **ppm:** parts per million or milligrams per liter. **AL:** Action Level, or the concentration of a contaminant which, if exceeded, triggers treatment or other requirement which a water system must follow. **TT:** Treatment Technique, or a required process intended to reduce the level of a contaminant in drinking water. * The Treatment Technique requirements for both Turbidity and Total Organic Carbon were met throughout the year.