

# 2009 Annual Drinking Water Quality Report

## UNION COUNTY PUBLIC WORKS

PWS ID# 01-90-413

We are pleased to present to you this year's Annual Drinking Water Quality Report showing our water system is in compliance with Federal and State Drinking Water Regulations. This report is a snapshot of last year's water quality. Included are details about from where your water comes, what it contains, and how it compares to standards set by regulatory agencies. 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 and to providing you with this information, because informed customers are our best allies.

### What EPA Wants You to Know

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).

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 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).

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, in some cases, 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, urban storm water runoff, 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; and 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. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

### When You Turn on Your Tap, Consider the Source

The water that is used by this system comes from two sources, the Catawba River located in Lancaster County, S.C. and the Pee Dee River located in eastern Anson County.

### Source Water Assessment Program (SWAP) Results

The North Carolina Department of Environment and Natural Resources (DENR), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface water intake) to Potential Contaminant Sources (PCSs). The results of the assessment are available in SWAP Assessment Reports that include maps, background information and a relative susceptibility rating of Higher, Moderate or Lower.

The relative susceptibility rating of each source for Union County Public Works was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area.).

The assessment findings are summarized in the table below:

#### Susceptibility of Sources to Potential Contaminant Sources (PCSs)

Source Name	Susceptibility Rating	SWAP Report Date
Catawba River WTP	Moderate	May 23, 2003
Anson County Water (Pee Dee River)	Moderate	March 17, 2005

The complete SWAP Assessment report for Anson County Water System may be viewed on the Web at: <http://www.deh.enr.state.nc.us/pws/swap> Please note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this web site may differ from the results that were available at the time this CCR was prepared. To obtain a printed copy of this report, please mail a written request to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh NC 27699-1634, or email request to [swap@ncmail.net](mailto:swap@ncmail.net). Please indicate your system name, PWSID, and provide your name, mailing address and phone number. If you have any questions about the SWAP report please contact the Source Water Assessment staff by phone at 919-715-2633.

The completed susceptibility assessment for the Catawba River Water Treatment Plant is available upon request from Mike Bailes, CRWTP Director at 803-286-5949. Of the 444 potential contaminate sources (PCSs) in the inventory 306 had more than one category of contaminants. The susceptibility analysis determined 178 PCSs with a high susceptibility ranking, 206 PCSs with a moderate susceptibility ranking and 60 PCSs with a low ranking.

It is important to understand that a susceptibility rating of “higher” does not imply poor water quality, only the systems’ potential to become contaminated by PCS’s in the assessment area.

### **Violations that Your Water System received for the Report Year**

We received no violations for samples taken in 2008. The Catawba River Water Treatment Plant did receive one violation for trihalomethanes due to an equipment malfunction. The faulty equipment was replaced in October 2007 and changed treatment techniques were made to correct the problem. Anson County received one violation for total organic carbon and one for trihalomethanes. Anson has taken steps to correct both of these violations.

### **What If I Have Any Questions Or Would Like to Become More Involved?**

If you have any questions about this report or concerning your water, please contact Scott Huneycutt at 704-296-4211. 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. The Union County Board of Commissioners meets on the first and third Monday of each month at 7:00 PM at the Union County Government Center.

### **Water Quality Data Table of Detected Contaminants**

We routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The table below lists all the drinking water contaminants that we detected in the last round of sampling for the particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in this table is from testing done January 1 through December 31, 2008.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

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.

#### Important Drinking Water Definitions:

*Not-Applicable (N/A)* – Information not applicable/not required for that particular water system or for that particular rule.

*Non-Detects (ND)* - Laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used.

*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 (ug/L)* - 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.

*Million Fibers per Liter (MFL)* - Million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

*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.

*Action Level (AL)* - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

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

*RAA – Running Annual Average*

*Maximum Residual Disinfection 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.

*Maximum Residual Disinfection Level (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.

**Maximum Contaminant Level (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 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.

Extra Note: MCLs 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.

**Microbiological Contaminants**

Contaminant (units)	MCL Violation Y/N	Your Water	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria 2008 Results Catawba WTP Anson County Union County	N N N	0 0 0	0	5% of monthly samples are positive	Naturally present in the environment
Fecal Coliform or E. coli 2008 Results Catawba WTP Anson County Union County	N N N	0 0 0	0	0 (Note: The MCL is exceeded if a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive)	Human and animal fecal waste

**Turbidity\* - Systems with population >10,000**

Contaminant (units)	MCL Violation Y/N	Your Water	MCLG	MCL	Likely Source of Contamination
Turbidity (NTU) Catawba WTP Anson County	N N	.09 .29 % 100 100	N/A	TT = 1 NTU  TT = percentage of samples ≤ 0.3 NTU	Soil runoff

\* Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. The turbidity rule requires that 95% or more of the monthly samples must be less than or equal to 0.3 NTU.

**Inorganic Contaminants**

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
Arsenic (ppb)	12-5-08	N	0	N/A		0	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Fluoride (ppm) Catawba WTP Anson County	2008 2008	N N	0.80 0.90	0.13 0.00	0.901 1.62	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

**Nitrate/Nitrite Contaminants**

Contaminant (units)	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
			Low	High			
Nitrate (as Nitrogen) (ppm) Catawba WTP	N	1.9	N/A		10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

**Unregulated Inorganic Contaminants**

Contaminant (units)	Sample Date	Your Water	Range		Secondary MCL
			Low	High	
Sulfate (ppm) Anson County	2008	27.2	27.2 – 27.2		250

**Unregulated VOC Contaminants**

Contaminant (units)	Sample Date	Your Water	Range	
			Low	High
Chloroform (ppm) Anson County	2008	58	35 - 78	
Bromodichloromethane Catawba WTP Anson County (ppm)	2008 2008	0.01 19	NA 12 - 26	
Chlorodibromomethane Anson County (ppm)	2008	4	3 – 8	

**Asbestos Contaminant**

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			

Total Asbestos (MFL)							
Anson County	11-13-02	N	0	NA	7	7	Decay of asbestos cement water mains; erosion of natural deposits
Union County	6-12-03	N	0				

### Lead and Copper Contaminants

Contaminant (units)	Sample Date	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm) (90 <sup>th</sup> percentile)						
Anson County	2006	0.069	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Catawba WTP	2006	0.086	0			
Union County	2007	0.12	0			
Lead (ppb) (90 <sup>th</sup> percentile)						
Anson County	2006	0	0	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Catawba WTP	2006	1.0	0			
Union County	2007	<0.003	0			

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. Union County Public Works 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>.

### Radioactive Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	MCLG	MCL	Likely Source of Contamination
Alpha emitters (pCi/L)						
Anson County	12-28-04	N	0	0	15	Erosion of natural deposits
Catawba WTP		N	1.047			
Beta/photon emitters (pCi/L)						
Anson County	12-28-04	N	6.0	0	50 *	Decay of natural and man-made deposits
Catawba WTP		N	1.545			
Combined radium (pCi/L)						
Anson County	12-28-04	N	0	0	5	Erosion of natural deposits
Catawba WTP		N	0.145			
Uranium (pCi/L)						
Anson County	12-28-04	N	0	0	20.1	Erosion of natural deposits
Catawba WTP		N	0			

\* Note: The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles. Our water system used Step 1 TOC Removal (Anson County) and a combination of Step 1 and Alternate Compliance Criteria (Catawba WTP) as the method to comply with the disinfectants/disinfectant byproduct treatment technique requirements.

### Disinfection Byproduct Precursors Contaminants

Contaminant (units)	Sample Date	MCL/TT Violation Y/N	Your Water	Range Ratio Low High	MCLG	MCL	Likely Source of Contamination
Total Organic Carbon (ppm) (TOC)-TREATED							
Catawba WTP	2008	N	1.0	1.0 - 1.0 0 - 1.51	N/A	TT	Naturally present in the environment
Anson County	2008	Y	1.17				

Note: Depending on the TOC in our source water, the system MUST have a certain % removal of TOC or must achieve alternative compliance criteria. If we do not achieve that % removal, there is an alternative % removal. If we fail to meet the alternative % removal, we are in violation of a Treatment Technique.

### Disinfectants and Disinfection Byproducts Contaminants

Contaminant (units)	MCL/MRD L Violation Y/N	Your Water (AVG)	Range Low High	MCLG	MCL	Likely Source of Contamination
TTHM (ppb) [Total Trihalomethanes]						
Union County RAA	N	69.0	38 - 160 50 - 100 48 - 106	N/A	80	By-product of drinking water chlorination
Catawba WTP	Y	70				
Anson County	Y	80				
HAA5 (ppb) [Total Haloacetic Acids]						
Union County RAA	N	47.5	19 102 30 60 15 57	N/A	60	By-product of drinking water disinfection
Catawba WTP	N	48				
Anson County	N	33				
Chlorite (ppm)	N	0.362	0.176 0.633	0.8	1	By-product of drinking water chlorination
Chlorine dioxide (ppb)						
Catawba WTP	N	30	0 68	MRDL = 80	MRDLG = 800	Water additive used to control microbes

Chlorine (ppm) Catawba WTP Anson County	N N	1.18 1.0	0.56 0.5	2.48 1.7	MRDLG = 4	MRDL = 4	Water additive used to control microbes
Choramines (ppm) Anson County	N	2.9	2.04	3.69	MRDLG = 4	MRDL = 4	Water additive used to control microbes

Secondary Contaminants, required by the NC Public Water Supply Section, are substances that affect the taste, odor, and/or color of drinking water. These aesthetic contaminants normally do not have any health effects and normally do not affect the safety of your water.

#### Water Characteristics Contaminants

Contaminant (units)	Sample Date	Your Water	Range Low/High	Secondary MCL
Iron (ppm) Anson County	2008	30	10 - 140	300
Manganese (ppb) Anson County	2008	11	1 - 100	50
Sodium (ppm) Catawba WTP Anson County	2008 2008	27 30.2	27 - 27 30.2 - 30.2	N/A
PH Anson County	2008	72	6.34 - 7.8	6.5 to 8.5