

Source Water Assessment

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 The Roanoke Rapids Sanitary District 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
Roanoke Rapids Lake	Moderate
Roanoke River	Moderate

The complete SWAP Assessment report for RRSd may be viewed on the Web at: <http://www.deh.enr.state.nc.us/pws/swap> 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. 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**.

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.

The Value of Quality Drinking Water

Water is our most precious natural resource. And while most of us don’t give it a second thought when we grab a glass and head to the faucet, a safe drinking water supply should not be taken for granted. Our country’s drinking water community creates jobs, attracts industry and investment, and provides for the health and welfare of our citizens in ways ranging from disease prevention to fire suppression. The value of the highest quality tap water in the world is almost too vast to measure.

Consider the Health Effects Worldwide:

- North America’s water and medical professionals have virtually eradicated most waterborne diseases, such as cholera, typhoid fever and dysentery.
- The U.S. Centers for Disease Control and Prevention ranked a drinkable, safe water supply as among the **top ten humanitarian achievements of the 20th century**.
- According to the World Health Organization, **1.2 billion people** globally do not have access to improved water supply sources and **2.6 billion people** do not have access to any type of improved sanitation facility.
- The World Health Organization also estimates that about **2 million people** die each year due to waterborne-related diseases. The most affected are the populations in developing countries, living in extreme conditions of poverty.

Consider a Cost Comparison Per Gallon:

Between an overabundance of choices and companies’ clever marketing and advertising campaigns, it is easy to lose sight of true value. Tap water may not come with a fancy label, but between its numerous benefits and its cost, it sells itself. Following is a cost comparison of a gallon of the more popular beverages regularly consumed. To ensure a uniform comparison, all prices were gathered locally in June 2010.

- | | |
|------------------------------------|--|
| ➤ Soda Pop: \$2.59 | ➤ Imported Beer: \$15.08 |
| ➤ Flavored Iced Tea: \$2.99 | ➤ Bottled Water: \$2.50 |
| ➤ Milk: \$2.86 | ➤ Orange Juice: \$5.96 |
| ➤ Drip Coffee (Incl. tax): \$13.82 | ➤ Tap Drinking Water: \$0.00368 |



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Roanoke Rapids Sanitary District

2010 Water Quality Report

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Water Treatment Plant 537-3319

Wastewater Treatment Plant 536-4884

Distribution & Collection 537-9747

Administrative Office 537-9137



Administrative Officers

Dan Brown, P.E., CEO

C.R. Potter, Finance Officer

J.B. Bennett, Jr., Chief Operator

A.G. Camp, Chief Operator

C.E. Turner, Chief Operator

Website: www.rrsd.org

The mission of the Roanoke Rapids Sanitary District is to affordably provide the highest quality water services; then safely collect wastewater and return clean water to the environment while promoting public trust and partnerships to the benefit of our associates and the satisfaction of our customers.

The Roanoke Rapids Sanitary District, a municipal corporation, was created by the North Carolina State Board of Health on April 21, 1931; under and by virtue of an act of the General Assembly, ratified on March 4, 1927, providing for the creation, government and operation of Sanitary Districts. Should you have any questions concerning this Report, please call our Administrative Office at **(252) 537-9137**.

The Roanoke Rapids Sanitary District welcomes public participation in decisions concerning your water, wastewater, or distribution/collection systems. The District Board holds a public meeting the second Thursday of every month beginning at 5:30 P.M. at the Administrative Office, 1000 Jackson Street, Roanoke Rapids.

**Water Treatment Plant
Public Water Supply ID # 04-42-010
Lab Certification ID # 37649**



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- **HYDRO-PAY - 537-9137**
- **ONLINE BILL PAY - www.rrsd.org**
- **AUTOMATED PHONE PAY - (866) 626-9056**

2010 Water Quality Report



Treated Water Quality Roundup

The Roanoke Rapids Sanitary District's number one priority is to provide all our customers with a safe and reliable supply of water that can be used with confidence. Every day, our employees are working to ensure that the water you drink meets all regulatory requirements and your expectations for safety, reliability, and quality.

To do this we conduct over 35,000 tests yearly on the water you drink. These tests start in the raw (untreated) water from the Roanoke Rapids Lake. (We also have an intake in the Roanoke River to draw water from in an emergency) We also run hundreds of tests on the water at different phases of the treatment process. The final tests are done on water from randomly selected homes and businesses. All of these test results are reported in accordance with the Water Quality Standards established by the United States Environmental Protection Agency (EPA) and the North Carolina Department of Environmental Health. We are proud to report that the water provided by the Roanoke Rapids Sanitary District exceeds all established water quality standards.

This 2010 **WATER QUALITY REPORT** is a summary of many of these tests and explanations of terms used in water quality reporting. If you have any further questions, please contact the **WATER TREATMENT PLANT** between 8AM and 4PM at **(252) 537-3319**.

Lead & Copper Rule Testing

The 1994 Federal Lead & Copper Rule mandates a household testing program for these substances. According to the rule, 90% of the samples from high risk homes must have levels less than 0.015 mg/L of lead and 1.3 mg/L of copper. In 2011 lead levels in the District averaged .010 mg/L and copper levels averaged .122 mg/L, well below the Federal levels. Our next lead and copper testing will be conducted in September 2011. 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. The Roanoke Rapids Sanitary District 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>.

EN ESPANOL

El informe contiene informacion importante sobre la calidad del agua en su comunidad. Traduzcalo o hable con alguien que lo entienda bien.

Special Concerns

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 \(800-426-4791\)](http://www.epa.gov/safewater/hotline).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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](http://www.epa.gov/safewater) or at <http://www.epa.gov/safewater>.

TERMS

Maximum Residual Disinfection Level Goal – The “Level” (MRDLG) 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- The “Highest Level” (MRDL) 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)- An enforceable level of a contaminant as close to the goal as is practical to achieve in light of available treatment technology and cost/benefit considerations.

Maximum Contaminant Level Goal (MCLG)- A level of a contaminant, not necessarily achievable, safely below the level of human health concerns.

Action Level (AL)- The level of a contaminant at which a water treatment plant must take some type of action to reduce or contain the contaminant.

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

Parts Per Million (PPM)- Equivalent to milligrams per liter (mg/L). One part per million is comparable to one minute in two years.

Parts Per Billion (PPB)- Equivalent to micrograms per liter. One part per billion is comparable to one minute in two thousand years.

Nephelometric Turbidity Units (NTU)- Turbidity is a measure of cloudiness in water

TURBIDITY

Turbidity is usually thought of as cloudiness of the water, and is caused by suspended matter. Organic and inorganic material, silt, algae or other tiny organisms can contribute to the turbidity of the water.

The degree of turbidity is measured at the Water Treatment Plant laboratory by shining a beam of light through water and measuring the angle at which the light is scattered by suspended matter. The reading gives the turbidity of the water measured in Nephelometric Turbidity Units (NTU'S).

Regulations passed in 1989 recognize reducing turbidity as one way to measure the removal or inactivation of certain targeted microorganisms. Currently, Giardia is one of those microorganisms and future regulations may include Cryptosporidium.

The EPA has established a Maximum Contaminant Level (MCL) for treated water turbidity of 0.3 NTU. The rule requires us to meet this standard 95% of the time during the month. In 2009, we met the standard 99.99% of the time with our highest reading at 0.311 NTU. For the year, we averaged 0.086 NTU.

Constituent	Highest Level Allowed (EPA'S MCL)	Ideal Goals (EPA'S MCLG)	Normal Range	Frequency Of Sample	Sanitary District Annual Average	Sources of Constituents
Fluoride	4 mg/L	4 mg/L	.9 mg/L – 1.2 mg/L	Every 4 Hours	.96 mg/L	Naturally occurring, Water additive
Nitrate	10 mg/L	10 mg/L	1 mg/L – 10 mg/L	Yearly	.26 mg/L	Wildlife & septic systems
Sodium	Not Regulated	20 mg/L	15 mg/L – 25 mg/L	Yearly	4.34 mg/L	Naturally occurring
Sulfate	Not Regulated	500 mg/L	None	Yearly	Less than 15mg/L	Soil runoff
Turbidity	.3 NTU'S	Treatment Technique	.1 NTU – 5 NTU	Every 4 Hours	.074 NTU'S	Soil runoff
Total Coliforms (Bacteria)	Less than 5% positive	0	Less than 5% positive	Daily	0	Naturally occurring
Iron	.3 mg/L	.3 mg/L	Less than .3 mg/L	Weekly	.37 mg/L	Naturally occurring
Manganese	.05 mg/L (Action Level)	.05 mg/L (Action Level)	Less than .05 mg/L	Weekly	.04 mg/L	Naturally occurring
pH (Standard Units)	N/A	N/A	6.5-8.0	Hourly	7.40	N/A
Alkalinity ,mg/L	N/A	N/A	Less than 35 mg/L	Daily	32.10 mg/L	N/A
Hardness, mg/L	N/A	N/A	20 mg/L -100 mg/L	Daily	35.28 mg/L	N/A

Disinfection By-Product Precursors Contaminants

Contaminant (units)	Sample Date	MCL/TT Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
Total Organic Carbon (ppm) (TOCs)-RAW	Monthly	N	3.72	2.86	4.74	N/A	TT	Naturally present in the environment
Total Organic Carbon (ppm) (TOCs)-TREATED	Monthly	N	2.18	1.78	2.46	N/A	TT	Naturally present in the environment

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 that, we are in violation of a Treatment Technique.

Contaminant (units)	MCL/MRDL Violation Y/N	Your Water (AVG)	Range		MCLG	MCL	Likely Source of Contamination
			Low	High			
TTHM (ppb) [Total Trihalomethanes]	N	68	48	118	N/A	80	By-product of drinking water chlorination
HAA5 (ppb) [Total Haloacetic Acids]	N	32	13	54	N/A	60	By-product of drinking water disinfection
Chlorine (ppm)	N	1.34	.77	2.19	MRDLG = 4	MRDL = 4	Water additive used to control microbes

(BOTH SIDES OF THIS NOTICE MUST BE COPIED AND DISTRIBUTED TO YOUR CUSTOMERS)

NOTICE TO THE PUBLIC

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

ROANOKE RAPIDS SANITARY DIST HAS NOT MET MONITORING REQUIREMENTS

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the compliance periods specified in the table below, we [did not monitor or test' or 'did not complete all monitoring or testing'] for contaminants listed below and therefore cannot be sure of the quality of our drinking water during that time.

CONTAMINANT GROUP**	COMPLIANCE PERIOD	NUMBER OF SAMPLES AND SAMPLING FREQUENCY	WHEN SAMPLES WERE OR WILL BE TAKEN (Water System to Complete)
Lead and Copper	July 1, 2010 through December 31, 2010	60 PER 6-MONTH	April 14, 2011

** See back of this notice for further information on contaminants.

What should I do? There is nothing you need to do at this time.

What is being done? [Describe corrective action.]

We have since taken the required samples, as described in the last column of the table above. The sample results showed we are meeting drinking water standards.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

For more information, please contact:

Responsible Person Dan Brown	System Name ROANOKE RAPIDS SANITARY	System Address (Street) 1000 Jackson St
Phone Number (252) 537-9137	System PWSID # NC0442010	System Address (City/State/Zip) Roanoke Rapids, NC 27870

Violation Awareness Date: April 4, 2011

Date Notice Distributed: June 29, 2011 Method of Distribution: Water Quality Report

Public Notification Certification:

The public water system named above hereby affirms that public notification has been provided to its consumers in accordance with all delivery, content, format, and deadline requirements specified in 15A NCAC 18C .1523.

Owner/Operator: _____ (Signature) _____ (Print Name) _____ (Date)

Contaminant Group List

(BA) Total Coliform Bacteria includes Fecal/*E. coli* bacteria. Testing for Fecal/*E. coli* bacteria is required if total coliform is present in the sample.

(DI) Disinfectant Residual must be tested with the collection of each compliance bacteriological sample, at the same time and site.

(AS) Asbestos - includes testing for Chrysotile, Amphibole and Total Asbestos.

(TTHM) - Total Trihalomethanes - include Chloroform, Bromoform, Bromodichloromethane, and Chlorodibromomethane.

(TOC) - Total Organic Carbon - includes testing for Alkalinity, Dissolved Organic Carbon (DOC), Total Organic Carbon (TOC) and Ultraviolet Absorption 254 (UV254). Source water samples must be tested for both TOC and Alkalinity. Treated water samples must be tested for TOC. Source water samples and treated water samples must be collected on the same day.

(HAA5)- Haloacetic Acids - include Monochloroacetic Acid, Dichloroacetic Acid, Trichloroacetic Acid, Monobromoacetic Acid, Dibromoacetic Acid.

(BB) Bromate/Bromide - includes testing for Bromate and/or Bromide.

(CD) Chlorine Dioxide/Chlorite - includes testing for Chlorine Dioxide and/or Chlorite.

(IC) Inorganic chemicals - include Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cyanide, Fluoride, Iron, Manganese, Mercury, Nickel, pH, Selenium, Sodium, Sulfate, and Thallium.

(LC) Lead and copper are tested by collecting one sample and testing that sample for both lead and copper.

(NT) Nitrate/ (NI) Nitrite - includes testing for nitrate and/or nitrite.

(RA) Radionuclides - includes Gross Alpha, Radon, Uranium, Combined Radium, Radium 226, Radium 228, Gross Beta, Tritium, Strontium 89, Strontium 90, Iodine 131, and Cesium 134.

(SOC) - Synthetic Organic Chemicals/Pesticides - SOC's are commonly used in industrial and manufacturing processes. SOC's include 2,4-D, 2,4,5-TP (Silvex), 3-Hydroxycarbofuran, Alachlor, Aldicarb, Aldicarb Sulfone, Aldicarb Sulfoxide, Aldrin, Atrazine, Benzo(a)pyrene, Butachlor, Carbaryl, Carbofuran, Chlordane, Dalapon, Dieldrin, Di(2-ethylhexyl)adipate, Di(2-ethylhexyl)phthalate, Dibromochloropropane (DBCP), Dicamba, Dinoseb, Endrin, Ethylene dibromide (EDB), Heptachlor, Heptachlor Epoxide, Hexachlorobenzene, Hexachlorocyclopentadiene, Lindane, Methomyl, Metolachlor, Methoxychlor, Metribuzin, Oxamyl(vydate), PCBs, Propachlor, Pentachlorophenol, Picloram, Simazine, Toxaphene.

(VOC) - Volatile Organic Chemicals, - VOCs are commonly used in industrial and manufacturing processes. VOCs include p-Isopropyltoluene, Chloromethane, Dichlorodifluoromethane, Bromomethane, Chloroethane, Fluorotrichloromethane, Hexachlorobutadiene, Naphthalene, 1,2,4-Trichlorobenzene, Cis-1,2-Dichloroethylene, Dibromomethane, 1,1-Dichloropropene, 1,3-Dichloropropene, 1,3-Dichloropropene, 1,2,3-Trichloropropene, 2,2-Dichloropropene, 1,2,4-Trimethylbenzene, 1,2,3-Trichlorobenzene, n-Butylbenzene, 1,3,5-Trimethylbenzene, Tert-Butylbenzene, Sec-Butylbenzene, Bromochloromethane, Chloroform, Bromoform, Bromodichloromethane, Chlorodibromomethane, Xylenes (Total), Dichloromethane, o-Chlorotoluene, p-Chlorotoluene, m-Dichlorobenzene, o-Dichlorobenzene, p-Dichlorobenzene, Vinyl Chloride, 1,1,-Dichloroethylene, 1,1-Dichloroethane, Trans-1,2,-Dichloroethylene, 1,2-Dichloroethane, 1,1,1-Trichloroethane, Carbon Tetrachloride, 1,2-Dichloropropane, Trichloroethylene, 1,1,2-Trichloroethane, 1,1,1,2-Tetrachloroethane, Tetrachloroethylene, 1, 1,2,2-Tetrachloroethane, Chlorobenzene, Benzene, Toluene, Ethylbenzene, Bromobenzene, Isopropylbenzene, Styrene, and n-Propylbenzene.

Instructions for Completing the Notice/Certification Form & for Performing Public Notice for Tier 3 Monitoring Violations

1. Complete **ALL** the missing information on the "Notice to the Public." (Note: Under the section of the notice entitled "What Happened? What is being done? When will the problem be corrected?" describe corrective actions you took or are taking. You may choose the appropriate language below, or develop your own:

- We have since taken the required samples, as described in the last column of the table above. The sample results showed we are meeting drinking water standards.
- We have since taken the required samples, as described in the last column of the table above. The sample for coliform bacteria exceeded the limit. [Describe corrective action; use information from public notice prepared for violating the limit.]
- We plan to take the required samples soon, as described in the last column of the table above.)

2. Provide public notification to your customers as soon as reasonably possible after you learn of the violation as follows:

<p>Community systems must use one of the following:</p> <ul style="list-style-type: none"> • Hand or direct delivery • Mail, as a separate notice or included with the bill <p>For community systems, this notice is appropriate for insertion in an annual notice or the Consumer Confidence Report (CCR), as long as public notification timing and delivery requirements are met (C.F.R. 141.204(d)).</p>	<p>Non-community systems must use one of the following:</p> <ul style="list-style-type: none"> • Posting in conspicuous locations • Hand delivery • Mail <p>For non-community systems, if you post the notice, it must remain posted as long as the violation or situation persists; in no case should the notice be posted less than 7 days, even if the violation is resolved. (C.F.R. 141.204(b)).</p>
<p>(Note: Both community and non-community systems must use <i>another</i> method reasonably calculated to reach others IF they would not be reached by one of the required methods listed above (C.F.R. 141.204(c)). Such methods could include newspapers, e-mail, or delivery to community organizations.</p>	

- **Both sides of this public notice/certification MUST be delivered to the persons served by the water system in order for your customers to have access to the required **Contaminant Group List**.**
- If you mail, post, or hand deliver, print your notice on letterhead, if available.
- Notify new billing customers or units prior to or at the time their service begins.
- Provide multi-lingual notifications if 30% of the residents served are non-English speaking.
- Repeat the notice quarterly for as long as the violation exists.
- Should you decide not to use this enclosed notice and develop your own version instead, the mandatory language in ***bold italics*** may not be altered and you **MUST** include the ten required elements listed in C.F.R. 141.205. A separate Public Notification Certification Form that is available on our web site or the certification located at the bottom of the sample notice provided **MUST** also be submitted.

3. After issuing the "Notice to the Public" to your customers, **sign and date** the "Public Notification Certification" at the bottom of the notice. Mail the completed public notice/certification form to the Public Water Supply Section, ATTN: Public Notification Rule Manager, 1634 Mail Service Center, Raleigh, NC 27699-1634 within **ten days** after issuing the notice (C.F.R. 141.31(d)). Keep a copy for your files.