



# Water Quality Report For 2010

## Seneca Light & Water Plant Seneca, South Carolina

Water System No. 3710002

Number 13

### About Seneca's Report

We are pleased to provide you with this Water Quality Report for 2010. This report is intended to provide you with important information about your drinking water and the efforts made by the City of Seneca to provide safe drinking water. The Environmental Protection Agency (EPA) and the South Carolina Department of Health and Environmental Control (SCDHEC) have established strict quality standards for drinking water. These standards are designed to protect the short and long term health of water consumers from waterborne disease organisms and harmful chemicals. Once each year, EPA requires public water systems to provide water customers a report containing information about drinking water quality and compliance with the quality standards.

Each year, the SCDHEC-certified laboratory at the Seneca Water Plant performs over 10,000 analyses for various water parameters, including tests for over 80 contaminants that may be in drinking water. Sampling for your health protection is conducted at every stage of the treatment process at our water plant and numerous points throughout the distribution system. Also, regularly scheduled monitoring for the presence of potential contaminants is conducted by SCDHEC.

Our testing indicates that the treatment of our water and the distribution of our water are effective in protecting the public health. As you will see from the table on page 3, our drinking water meets and exceeds all health standards under the Safe Drinking Water Act. The City of Seneca wants you to know that we are dedicated to providing clean, safe drinking water to our customers and community.

#### **AWOP ACHIEVEMENT AWARD**

The Area Wide Optimization Program (AWOP) was established by DHEC to maximize public health protection from microbial contaminants through optimized performance criteria. The Seneca Water Plant has received this award for nine years since 2001.

### Where Does My Water Come From?

The sources of drinking water (both tap 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 can pick up substances resulting from the presence of animals or from human activities.

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.

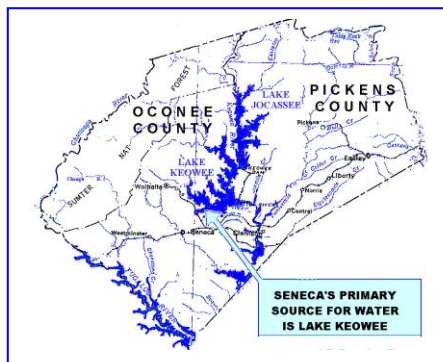
Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

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.

Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

Our source of water is Lake Keowee. It is a man-made surface water source, created by Duke Energy, which we treat in our water treatment plant located on the southern end of the Lake off Northampton Road. Our system is interconnected with the cities of Walhalla and Westminster for supplementary water supply. Water was not obtained from either of these sources in 2010.



The SC Department of Health and Environmental Control completed a source water assessment for each watershed in the state. The Source Water Assessment report for the City of Seneca's drinking water source, Lake Keowee, is available on the SCDHEC web site. A Source Water Assessment Summary is included in this report.

## OUR WATER PLANT

The existing Water Treatment Plant was constructed in 1968 by Duke Energy to replace the plant inundated by the development of Lake Keowee. The Plant provided water for the residents of the City of Seneca and surrounding areas of Oconee County. The original Plant capacity was 4 million gallons per day (MGD). In 1981, the Plant was expanded to an 8 MGD capacity. The second expansion, in 1990, increased the Plant capacity to 12 MGD to meet the growing needs of the area. In 2005, the Plant was increased to 14 MGD and the last upgrade, completed in 2009, increased the Plant capacity to 20 MGD.

The plant is divided into three treatment trains with two basins and two filters per train. Two trains work as a conventional surface water treatment plant, which removes trace amounts of clays, silts, and particulate matter from the water in Lake Keowee by destabilizing the particulates and removing them using the process of coagulation followed by sedimentation and filtration. The third train is a Dissolved Air Flootation (DAF) treatment process. The DAF process uses micro-bubbles injected into the water to remove the particulates in the water by floatation instead of sedimentation. This process is more efficient than conventional treatment and can treat more water in a smaller space. The other processes for the DAF are similar to the conventional treatment. The effectiveness of these processes is determined by measuring the turbidity, or cloudiness, of the water after filtration.

The Plant adds chlorine to the water in two stages for disinfection of pathogens. For disinfection, the EPA and the State standard requires a certain amount of chlorine concentration with a corresponding amount of contact time. Also, a detectable level of disinfectant, or chlorine, must be maintained throughout the distribution system. The Plant also adds fluoride to help prevent tooth decay, and phosphate to stabilize the water for prevention of corrosion occurrences.

The Seneca Water Plant is maintained and monitored by "A Class" State Certified Environmental Systems Operators who are thoroughly and continually trained to perform routine chemical and physical tests.

## SOURCE WATER ASSESSMENT SUMMARY

The SCDHEC source water assessment contains the completed groundwater susceptibility assessment for the City of Seneca. The system is located in Oconee, SC in the Savannah-Salkehatchie Basin and serves a primary population of 29892. Of the 144 potential contaminant sources (PCSs) in this initial inventory, 99 PCSs had more than one category of contaminants. The inventory includes 67 PCSs with volatile organic compounds (VOCs), 93 PCSs with petroleum products, 71 PCSs with metals, 43 PCSs with nitrates, 25 PCSs with pesticides/herbicides, 33 PCSs with pathogens, no PCSs with radionuclides, and no PCSs with undetermined contaminants. The susceptibility analysis determined 61 PCSs with high susceptibility ranking, 63 PCSs with a moderate susceptibility ranking, and 20 PCSs with low susceptibility ranking.

## **DEFINITIONS APPLICABLE TO THE WATER QUALITY DATA:**

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

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.

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 Residual Disinfectant 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 Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health.

Nephelometric Turbidity Units (NTU): Nephelometric turbidity units (a measure of the cloudiness of water).

Not Applicable (NA): Not applicable to the subject matter.

Not Detected (ND): Not detected.

Not Required (NR): Data is not required for this meal.

No Standard (NS): No standard.

Parts per Million (ppm): Parts per million, or milligrams per liter (mg/l).

Parts per Billion (ppb): Parts per billion, or micrograms per liter (ug/l).

Picocuries per Liter (pCi/L): Picocuries per Liter, a measure of radioactivity.

Running Annual Average (RAA): Average of four consecutive quarters.

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

## **REQUIRED LEAD AND COPPER INFORMATION**

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 City of Seneca 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 drinking 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>.

**WATER QUALITY DATA** – The table below lists all the drinking water contaminants that were detected for the 2010 calendar year. The presence of these contaminants does not necessarily pose a health risk. The testing for these compounds is part of our routine analytical practice of protecting your health. Unless otherwise noted, the data presented in this table is from testing done January 1 – December 31, 2010. We monitor for some contaminants less than once per year, and for those contaminants, the date of the last sample is shown in the table.

REGULATED CONTAMINANTS							
Contaminant (units)	MCLG	MCL	Level Found	Range	Sample Date	Violation	Typical Source
<b>Physical Characteristics</b>							
Turbidity (NTU)	NA	TT = 1	Highest Level Found 0.09	Monthly Averages 0.04 to 0.06	2010	None	Soil runoff. Turbidity is a measure of the cloudiness of the water. We measure it because it is a good indicator of the effectiveness of our filtration system.
		TT = < 0.3 95 % of the time	100 % of samples are below the MCL				
<b>Inorganic Contaminants</b>							
Fluoride (ppm)	4	4	0.9	NA	01/19/10	None	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate (ppm)	10	10	0.057	NA	01/19/10	None	Run off from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
<b>Disinfection &amp; Disinfection By-Products</b>							
Chlorine (ppm)	MRDLG 4	MRDL 4	Highest Quarterly Average 1.04	Monthly Averages 0.72 to 1.10	2010	None	Water additive used to control microbes.
Total Trihalomethanes (ppb)	0	80	Highest RAA 33	14.46 to 57.51	2010	None	By-product of drinking water chlorination.
Haloacetic Acids (ppb)	0	60	Highest RAA 23	13.26 to 37.44	2010	None	By-product of drinking water chlorination.
<b>Disinfection By-Product Precursor</b>							
Total Organic Carbon (ppm)	MRDLG NS	MRDL TT	NR	Seneca Water Plant met requirements	2010	None	Naturally present in the environment.
<b>Lead &amp; Copper Rule</b>							
Lead (ppb)	0	AL = 15	90 <sup>th</sup> percentile 0.0 0 > AL	ND	08/17/10	None	Corrosion of household plumbing systems; Erosion of natural deposits.
Copper (ppm)	1.3	AL = 1.3	90 <sup>th</sup> percentile 0.057 0 > AL	ND to 0.072	08/17/10	None	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.
<b>Radiological Contaminants</b>							
Combined Radium 226/228 (pCi/L)	0	5	0.1	NA	03/28/06	None	Erosion of natural deposits
Gross Alpha (excluding radon & uranium) (pCi/L)	0	15	0.4	NA	03/28/06	None	Erosion of natural deposits

### **Unregulated Contaminant Monitoring Rule (UCMR2)**

We were monitored for the UCMR2 in 2010. **No detections were noted.** 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 certain contaminants in drinking water and whether it needs to regulate those contaminants in the future. If you would like receive the list of contaminants monitored please contact the Seneca Water Plant at (864) 885-2735.

**THE ENVIRONMENTAL PROTECTION AGENCY  
REQUIRES THAT ANNUAL WATER QUALITY  
REPORTS CONTAIN THE FOLLOWING  
STATEMENTS**

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 EPA's Safe Drinking Water Hotline (1-800-426-4791).

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.

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 microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Seneca Light & Water Plant  
P.O. Box 4773  
Seneca, South Carolina 29679

**WHAT IF I HAVE QUESTIONS?**

We would be happy to talk with you. For additional information or questions about this report contact:

Mr. Steven Fletcher  
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P.O. Box 4773  
Seneca, South Carolina 29679  
(864) 885-2735

Seneca Light & Water Plant is managed by the City of Seneca. Regularly scheduled meetings of the City Council occur on the second Tuesday of every month in City Hall at 7:00 p.m. Please feel free to participate in these meetings.

You can also find information about the City of Seneca on our web site:

<http://www.seneca.sc.us>

For more information on drinking water, call EPA Safe Drinking Water Hotline:

[1-800-426-4791](tel:1-800-426-4791)

Visit the EPA web site:

<http://www.epa.gov/ogwdw>

Visit the SCDHEC web site:

<http://www.scdhec.net/water>

Este informe contiene informacion muy importante sobre la calidad del agua en su comunidad. Favor de hablar con alguien que puede traducirlo para usted.

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