



## 2021 ANNUAL DRINKING WATER REPORT

South Granville Water And Sewer Authority

PWSID #02-39-107

June 2022

### REPORT OVERVIEW

The SGWASA Water Plant routinely monitors for contaminants in your drinking water according to federal and state laws. This report shows the results of our monitoring for the period January 1st through December 31st, 2021 and includes contaminant testing results from previous years that were not scheduled to be tested in 2021.

We are pleased to present to you the Annual Drinking Water Quality Report. Included are details about SGWASA's water source, the water composition, and how the water 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. **If you have any questions about this report or concerning your water, please contact Jonathan Yancey, Water Plant Superintendent at 919-575-3118 or contact SGWASA Customer Service at 919-575-3367 weekdays between the hours of 8:30 am – 4:30 pm. We want our valued customers to be informed about their water utility. Should you want to learn more SGWASA, then please consider attending any of our regularly scheduled monthly Board meetings. The Board meetings are held at 6:00 pm on the 2nd Tuesday of the month, at the Butner Town Hall. Please see our website at [www.sgwasa.org](http://www.sgwasa.org) for more information.**

### SGWASA WATER SOURCE

SGWASA's water source is the R.D. Holt Reservoir ("reservoir") located off Old Oxford Highway 75 just northwest of Butner, NC. The reservoir is a **2.2-billion-gallon** surface water supply covering an area of approximately 374 acres. The reservoir is part of the Upper Neuse River basin. The reservoir is nestled within a heavily forested watershed that helps to minimize outside impacts on the lake. The reservoir provides excellent seasonal non-contact (no swimming or water-skiing allowed) recreation such as fishing, boating, and picnicking. The reservoir provides **over 13 million gallons of water for treatment each day**. The R.D. Holt Reservoir is a valuable natural water resource for SGWASA and its customers.

### HOW SGWASA TREATS THE WATER FROM THE RESERVOIR

Water is withdrawn from the R.D. Holt Reservoir and treated at the SGWASA Water Plant. The water plant can treat **up to 7.5 million gallons of water a day**. The treatment process has five (5) main steps: coagulation, flocculation, sedimentation, filtration, and disinfection. First, chemicals are added to the raw water where they form solid material around solid particles such as silt, mud, sand, etc. This is known as coagulation. As these particles move along the treatment process, they clump together forming larger and heavier particles. This is known as flocculation. During the sedimentation process, the particles settle to the bottom of large settling basins where they are later removed. The water then gets its first addition of disinfectant (chlorine) to eliminate any bacteria that may be present before flowing through additional filters. The filters remove any remaining particles in the water. Finally, one last dose of disinfectant (chloramine) is added to ensure that the water is safe to drink when it reaches the consumers tap.

The SGWASA Water Plant laboratory is certified by the State of North Carolina for bacteriological analysis. Lab staff has gained individual certifications through the State Laboratory of Public Health voluntary certification program. Compliance and process control monitoring are routinely performed with all National Primary Drinking Water Regulations being met.



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### WHAT THE 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).

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. SGWASA is responsible for providing high quality drinking water but cannot control the variety of materials used in residential, commercial, or institutional plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for up 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>.**

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.

To ensure that tap water is safe to drink, EPA prescribes regulations which limit the number 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 is surface water from Knapp of Reeds Creek Impoundment (Holt Reservoir) and is located off Old Highway 75 just northwest of Butner.



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### 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 SGWASA 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
Knapp of Reeds Creek Impoundment (Holt Reservoir)	Lower	Sept. 2020

The complete SWAP Assessment report for SGWASA may be viewed on the Web at: <https://www.ncwater.org/?page=600> and may also be found on the SGWASA website. 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. If you are unable to access your SWAP report on the web, you may mail a written request for a printed copy to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email requests to [swap@ncdenr.gov](mailto:swap@ncdenr.gov). Please indicate your system name, number, 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 919-707-9098.

### HELP PROTECT YOUR SOURCE WATER

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source(s) in several ways: (examples: dispose of chemicals properly; take used motor oil to a recycling center, volunteer in your community to participate in group efforts to protect your source, etc.).

### VIOLATIONS THAT SGWASA RECEIVED FOR 2021

NONE

### WATER QUALITY DATA TABLE OF DETECTED CONTAMINANTS

As required by Federal and State laws, SGWASA monitors over 150 contaminants in your drinking water. The table below lists all the drinking water contaminants that SGWASA detected in the last round of sampling for each 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, 2021.** The EPA or the State requires SGWASA 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.



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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 required process intended to reduce the level of a contaminant in drinking water.

**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 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.

**Locational Running Annual Average (LRAA)** – The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters under the Stage 2 Disinfectants and Disinfection Byproducts Rule.



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**Level 1 Assessment** - A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

**Level 2 Assessment** - A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

**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.

## TABLES OF DETECTED CONTAMINANTS

### REVISED TOTAL COLIFORM RULE:

**Microbiological Contaminants in the Distribution System** - For systems that collect *less than 40* samples per month

Contaminant (units)	MCL Violation Y/N	Your Water	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria (presence or absence)	N	0	N/A	TT*	Naturally present in the environment
<i>E. coli</i> (presence or absence)	N	0	0	Routine and repeat samples are total coliform-positive and either is <i>E. coli</i> -positive or system fails to take repeat samples following <i>E. coli</i> -positive routine sample or system fails to analyze total coliform-positive repeat sample for <i>E. coli</i>  <u>Note:</u> If either an original routine sample and/or its repeat samples(s) are <i>E. coli</i> positive, a Tier 1 violation exists.	Human and animal fecal waste

\* If a system collecting fewer than 40 samples per month has two or more positive samples in one month, an assessment is required.



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### Microbiological Contaminants in the Source Water

Fecal Indicator	Number of "Positive/Pres ent" Samples	Date(s) of fecal indicator-positive source water samples	Source of fecal contamination, if known	Significant Deficiency Cited by the State? Y/N (If "Y", see explanation below)	MCL G	MC L	Likely Source of Contamination
<i>E. coli</i> , (presence or absence)	0	NA	NA	N	0	0	NA
<i>enterococci</i> or coliphage, (presence or absence)	0	NA	NA	N	N/A	TT	NA

### CCR Health Effects Language for the RTRC: Level 1 or 2 Assessment Not Due to *E. coli* MCL Violation

Consumer Confidence Report (CCR) Language	Citation
Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. SGWASA found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.	40 CFR 141.153(h)(7)(i)(A)
During the past year we were required to conduct (1) Level 1 assessment(s). (1) Level 1 assessment(s) were completed. In addition, we were required to take (1) corrective actions and we completed (1) of these actions.	40 CFR 141.153(h)(7)(i)(B)

### Turbidity\*

Contaminant (units)	Treatment Technique (TT) Violation Y/N	Your Water	MCL G	Treatment Technique (TT) Violation if:	Likely Source of Contamination
Turbidity (NTU) - Highest single turbidity measurement	N	.33	N/A	Turbidity > 1 NTU	Soil runoff
Turbidity (NTU) - Lowest monthly percentage (%) of samples meeting turbidity limits	N	100%	N/A	Less than 95% of monthly turbidity measurements are ≤ 0.3 NTU	

\* 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.

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### Inorganic Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Fluoride (ppm)	1/20/21	N	.48	0.2– 1.0	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

### Asbestos Contaminant

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Total Asbestos (MFL)	4/14/20	N	0.1419	NA	7	7	Decay of asbestos cement water mains; erosion of natural deposits

### Unregulated Inorganic Contaminants

Contaminant (units)	Sample Date	Your Water (average)	Range	
			Low	High
Sodium (ppm)	1/20/21	25.6	NA	

### Unregulated Contaminants UCMR4

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 the unregulated contaminants in drinking water and whether future regulations are warranted.

Contaminant (units)	Sample Date	Sample Point	RDL	Your water (AVG)	RANGE LOW HIGH	SMCL
Total Microcystin	7/13/20-11/3/20	End Point (EP)	NA	108.5	60 - 140	
Cylindrospermopsin	7/13/20-11/3/20	EP	NA	99.6	-	
Uracil-4	7/13/20-11/3/20	EP	NA	107.94	50 - 150	
L-phenylalanine	7/13/20-11/3/20	EP	NA	106.8	50 -150	

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Anatoxin-a	7/13/20-11/3/20	EP	NA	86	-	
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### Lead and Copper Contaminants

Contaminant (units)	Sample Date	Your Water	Number of sites found above the AL	MCLG	AL	Likely Source of Contamination
Copper (ppm) (90 <sup>th</sup> percentile)	1/1/21-6/1/21	.096	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits.
Lead (ppb) (90 <sup>th</sup> percentile)	1/1/21-6/1/21	<0.003	0	0.015	AL=15	Corrosion of household plumbing systems; erosion of natural deposits

### Total Organic Carbon (TOC)

Contaminant (units)	TT Violation Y/N	Your Water (RAA Removal Ratio)	Range Monthly Removal Ratio Low - High	MCLG	TT	Likely Source of Contamination	Compliance Method (Step 1 or ACC#_)
Total Organic Carbon (removal ratio) (TOC)-TREATED	N	1.76	1.48-1.81	N/A	TT	Naturally present in the environment	STEP 1

### Disinfectant Residuals Summary

	Year Sampled	MRDL Violation Y/N	Your Water (highest RAA)	Range		MRDLG	MRDL	Likely Source of Contamination
				Low	High			
Chlorine (ppm)	2021	N	.25	0.80	2.6	4	4.0	Water additive used to control microbes
Chloramines (ppm)	2021	N	2.08	1	3.6	4	4.0	Water additive used to control microbes

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### Stage 2 Disinfection Byproduct Compliance - Based upon Locational Running Annual Average (LRAA)

Disinfection Byproduct	Year Sampled	MCL Violation Y/N	Your Water (highest LRAA)	Range Low High	MCLG	MCL	Likely Source of Contamination
<b>TTHM (ppb)</b>					<b>N/A</b>	<b>.80</b>	<b>Byproduct of drinking water disinfection</b>
Coley RD (B01)	2021	N	.030	.029 - .032			
Butner Stem Elementary (B02)	2021	N	.032	.030 - .032			
Carriage Hill (B03)	2021	N	.030	.028- .030			
Skipping Stone (B04)	2021	N	.031	.029- .031			
<b>HAA5 (ppb)</b>					<b>N/A</b>	<b>.060</b>	<b>Byproduct of drinking water disinfection</b>
Coley RD (B01)	2021	N	.027	.023 - .027			
Butner Stem Elementary (B02)	2021	N	.028	.024- .028			
Carriage Hill (B03)	2021	N	.027	.023 - .027			
Skipping Stone (B04)	2021	N	.026	.022 - .026			

**For TTHM:** *Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.*

**For HAA5:** *Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.*

The PWS Section requires monitoring for other misc. contaminants, some for which the EPA has set national secondary drinking water standards (SMCLs) because they may cause cosmetic effects or aesthetic effects (such as taste, odor, and/or color) in drinking water. The contaminants with SMCLs normally do not have any health effects and normally do not affect the safety of your water.



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### Other Miscellaneous Water Characteristics Contaminants

Contaminant (units)	Sample Date	Your Water	Range		SMCL
			Low	High	
Sodium (ppm)	1/20/21	25.6	NA		N/A
Sulfate (ppm)	1/20/21	50	NA		250 mg/L
pH	1/20/21	8.1	NA		6.5 to 8.5

### *Cryptosporidium*

Our system monitored for *Cryptosporidium* and found levels of 0.091 oocysts on March 10, 2017.

*Cryptosporidium* is a microbial pathogen found in surface water throughout the U.S. Although filtration removes *Cryptosporidium*, the most commonly used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water and/or finished water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and the elderly are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

### What does this mean?

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 contaminants are available from the **Safe Drinking Water Hotline at 1-800-426-4791**.

We, at the SGWASA Water Treatment Plant, work twenty-four hours a day to provide top quality water to every tap. We ask that all our customers help us to protect our water sources, which are the heart of our community, our way of life and our children's future.

### WHAT CAN YOU DO TO PROTECT DRINKING WATER?

**Get involved with water issues.** Contact the water plant at (919) 575-3118 for information.

**Use water wisely.** Check your plumbing for leaks and fix them. Use water for irrigation only in the early morning or late evening.

**Be environmentally conscious around the lake.** Try to prevent oil and fuel spills while boating. Minimize pet waste to the lake.



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More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency Safe Drinking Water Hotline at **1-800-426-4791**.

**If you have any questions about this report or concerning your water, please contact Jonathan Yancey, Water Plant Superintendent at 919-575-3118 or contact SGWASA Customer Service at 919-575-3367 weekdays between the hours of 8:30 am – 4:30 pm.**

We want our valued customers to be informed about their water utility. Should you want to learn more SGWASA, then please consider attending any of our regularly scheduled monthly Board meetings. The Board meetings are held at 6:00 pm on the 2nd Tuesday of the month, at the Butner Town Hall. Please see our website at [www.sgwasa.org](http://www.sgwasa.org) for more information.