



## 2023 ANNUAL DRINKING WATER REPORT

South Granville Water and Sewer Authority  
PWSID # NC 02-39-107  
June 2024

### 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, 2023 and includes contaminant testing results from previous years that were not scheduled to be tested in 2023.

We are pleased to present to you the Annual Drinking Water Quality Report. Included in this report are details about SGWASA's water source, the water composition, and how the water compares to standards set by regulatory agencies. Our goal is to provide you with a safe and dependable supply of drinking water. We are committed to ensuring the water meets all federal and state regulations. We want our valued customers to be informed about their water utility. Therefore, if you have any questions about this report, then please contact Jonathan Yancey, Water Plant Superintendent at 919-575-3118 weekdays between the hours of 8:30 am – 4:30 pm. 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'S 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Water is withdrawn from the R.D. Holt Reservoir and treated at the SGWASA Water Plant.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. The first step in the process, known as coagulation, adds chemicals to the raw water where the chemicals form solid material around solid particles such as silt, mud, sand, etc. The second step in the process,

known as flocculation, occurs as the particles move along the treatment process clumping together forming larger and heavier particles. Step three, the sedimentation process, is when the heavier particles from step two settle to the bottom of large settling basins, where they are removed later. Step four, the filtration process, is where the water 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, step five, known as the disinfection process, is where the water gets one last dose of disinfectant (chloramine) added to the water to ensure the water is safe to drink.

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

### **WHAT THE EPA WANTS YOU TO KNOW**

Drinking water, including bottled water, may be expected to contain at least tiny amounts of 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.

### **PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)**

US EPA's Recent Interim Health Advisory Levels for PFOA and PFOS warrant the continuation of efforts to reduce PFAS in all sources, including drinking water, until regulatory (Maximum Contaminant Levels) standards are adopted. On June 15, 2022, the US EPA reduced its health advisory levels ("HAL") for two chemicals - PFOA and PFOS from 70 parts per trillion to interim levels of 0.004 and 0.02 parts per trillion. A part per trillion is one drop of water in an Olympic size swimming pool. These levels are so low they cannot even be measured. The EPA's interim HALs are guidance and not regulatory requirements. However, the EPA is working on establishing a rule reflecting maximum contaminant levels of PFAS in the drinking water. EPA's Interim HALs are meant to identify the amount of a chemical a person can be exposed to for their entire life (70 years) without it causing any adverse health impacts.

SGWASA remains proactive in combatting the impact of PFAS being deposited into our ecosystem. Our top priority is to provide quality water and sanitary sewer services to our customers in an efficient, sustainable, and environmentally conscious manner. We are concerned about PFAS discoveries in the environment and are taking an aggressive approach to testing, managing, and processing PFAS contributing to SGWASA's drinking water source: Lake Holt. The authority has prioritized upgrading SGWASA's treatment facility to align with the EPA's updated regulations, testing, and processing methods.

In July 2023, SGWASA hired engineering consultant CDM-Smith to assist SGWASA on its journey with PFAS/PFOS compliance. CDM-Smith was tasked with two items: 1.) creating a PFAS Pilot Testing Program, and 2.) submitting on SGWASA’s behalf, two (2) NCDEQ State Revolving Fund (SRF) financing/grant applications. One NCDEQ SRF application was for the maximum grant amount of \$500,000 for the PFAS pilot testing, and the second NCDEQ grant was in the amount of \$22,000,000 for PFAS mitigation engineering design and construction. The two NCDEQ applications were submitted in early October 2023. The Pilot Testing project is associated to the SGWASA FY23-33 CIP ID# 101-07 at an estimated cost of \$500,000 for design work.

CDM-Smith completed the PFAS Pilot Testing Program Report in January 2024. The final technical report describes how SGWASA will move forward with the PFAS Pilot Testing in 2024. SGWASA was notified in March 2024 by NCDEQ that SGWASA will receive a \$500,000 grant to perform the PFAS Pilot Testing program. The Pilot Testing Program will lead to the design and construction of PFAS mitigation at the water treatment plant. The Pilot Testing Program will begin in 2024. SGWASA is reapplying for the NCDEQ Grant in spring 2024 and fall 2024 for a \$22,000,000 engineering and construction grant.

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

### **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 2023**

NONE.

### **Important Drinking Water Definitions:**

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

**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 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.

**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, 2022.** 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.

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.

**Microbiological Contaminants in the Distribution System**

Contaminant (units)	MCL Violation Y/N	Number of Positive/Present Samples	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria (presence or absence)	No	0	N/A	N/A	Naturally present in the environment
<i>E. coli</i> (presence or absence)	N	0	N/A	N/A	Human and animal fecal waste

**Microbiological Contaminants in the Source Water**

Fecal Indicator	Number of "Positive/Present" 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)	MCLG	MCL	Likely Source of Contamination
<i>E. coli</i> , (presence or absence)	0	N/A	N/A	No	N/A	N/A	Human and animal fecal waste

Fecal Indicator	Number of "Positive/Present" 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)	MCLG	MCL	Likely Source of Contamination
<i>enterococci</i> or coliphage (presence or absence)	0	N/A	N/A	No	N/A	N/A	Human and animal fecal waste

**Turbidity\***

Contaminant (units)	Treatment Technique (TT) Violation Y/N	Your Water	MCLG	Treatment Technique (TT) Violation if:	Likely Source of Contamination
Turbidity (NTU) - Highest single turbidity measurement	N	.295	N/A	Turbidity > 1 NTU	Soil runoff
Turbidity (%) - Lowest monthly percentage (%) of samples meeting turbidity limits	N	100%	N/A	Less than 95% of monthly turbidity measurements are $\leq$ 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.

**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	No	.1419	N/A	7	7	Decay of asbestos cement water mains; erosion of natural deposits



### Lead and Copper Contaminants

Contaminant (units)	Sample Date	Your Water (90 <sup>th</sup> Percentile)	Number of sites found above the AL	MCLG	AL	Likely Source of Contamination
Copper (ppm) (90 <sup>th</sup> percentile)	1/1/2021-6/31/2021	0.096	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) (90 <sup>th</sup> percentile)	1/1/2021-6/31/2021	<0.003	0	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits

\*\* Note: Samples required every 3 years.

### Total Organic Carbon (TOC)

Contaminant (units)	TT Violation Y/N	Your Water (lowest RAA)	Range Monthly Removal Ratio Low - High	MCLG	Treatment Technique (TT) violation if:	Likely Source of Contamination
Total Organic Carbon (TOC) Removal Ratio (no units)	N	1.31	1.31-1.56	N/A	Removal Ratio RAA <1.00 and alternative compliance criteria was not met	Naturally present in the environment

### Disinfectant Residuals Summary

	MRDL Violation Y/N	Your Water (RAA)	Range Low High	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)	No	.19	.9-3.5	4	4.0	Water additive used to control microbes
Chloramines (ppm)	No	2.04	1.0-.31	4	4.0	Water additive used to control microbes

**Total Trihalomethanes (TTHM) and Haloacetic Acids (five) (HAA5)**

Contaminant (units)	Year Sampled	MCL Violation Y/N	Your Water (highest LRAA)	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
TTHM (ppb)	2023	N				N/A	.080	Byproduct of drinking water disinfection
Coley Rd & Gate 1 Rd			.043	.023-.073				
Butner-Stem Elementary			.044	.025-.073				
Carriage Hill & Tally Ho			.044	.021-.076				
Skipping Stone in Granville Oaks			.042	.022-.074				
HAA5 (ppb)	2023	N				N/A	.060	Byproduct of drinking water disinfection
Coley Rd & Gate 1 Rd			.029	.019-.030				
Butner Stem Elementary			.029	.020-.038				
Carriage Hill & Tally Ho			.028	.007-.037				
Skipping Stone In Granville Oaks			.030	.018-.039				

The Public Water Supply (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.

**Other Miscellaneous Water Characteristics Contaminants**

Contaminant (units)	Sample Date	Your Water	Range		SMCL
			Low	High	
Sodium (ppm)	1/25/2023	24.6 MG/L		N/A	N/A
Sulfate (ppm)	1/25/2023	47.0 MG/L		N/A	250
pH	1/25/2023	8.4		N/A	6.5 to 8.5

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 regulations are warranted. Qualifier Definition- U- Indicates the compound was analyzed for, but not detected (minimum that could be recorded. Results can also be read with a less than symbol (<))

### Unregulated Contaminants

Lithium EPA 200.7	Average	Range	Qualifier
µg/L = ppb (parts per billion)			
Lithium	7.50	7.50-7.50	U
<b>PFAS EPA 533</b>			
ng/L = ppt (parts per trillion)			
11CI-PF3OUdS	1.53	1.50-1.60	U
4:2 FTS	0.93	0.90-0.97	U
6:2 FTS	1.70	1.50-2.70	U
8:2 FTS	1.53	1.50-1.60	U
9CI-PF3ONS	0.62	0.61-0.65	U
ADONA	0.93	0.91-0.97	U
HFPO-DA	1.53	1.50-1.60	U
NFDHA	6.19	6.10-6.40	U
Perfluorobutanesulfonic Acid	1.12	0.91-1.50	U
Perfluorodecanoic Acid	0.93	0.91-0.97	U
Perfluorohexanoic Acid	1.00	0.91-1.20	U
PFBA	1.99	1.50-3.00	U
PFEESA	0.93	0.91-0.97	U
PFHpS	0.93	0.91-0.97	U
PFMBA	0.93	0.91-0.97	U
PFMPA	1.23	1.20-1.30	U
PFPeA	0.93	0.91-0.97	U
PFPeS	1.23	1.20-1.30	U
Perfluorododecanoic Acid	0.93	0.91-0.97	U
Perfluoroheptanoic Acid	1.11	0.91-1.80	U
Perfluorohexanesulfonic Acid	1.22	0.91-2.20	U
Perfluorononanoic Acid	1.23	1.20-1.30	U
Perfluorooctanesulfonic Acid	6.69	1.20-19.00	
Perfluorooctanoic Acid	4.11	1.20-11.00	
Perfluoroundecanoic Acid	0.62	0.61-0.65	U

PFAS EPA 537.1			
ng/L = ppt (parts per trillion)			
NEtFOSAA	1.53	1.50-1.60	U
NMeFOSAA	1.80	1.70-1.90	U
Perfluorotetradecanoic Acid	2.45	2.30-2.50	U
Perfluorotridecanoic Acid	2.18	2.10-2.20	U

**Qualifier Definition-**

U- Indicates the compound was analyzed for, but not detected (minimum that could be recorded. Results can also be read with a less than symbol (<))

EPA 200.7- Lithium Results: Date of Analysis (µg/L = ppb)						
June Test 1		August Test	November Test 1		February Test 1	
7.50		7.50	7.50		7.50	
EPA 533- Total PFAS Results: Date of Analysis (ng/L = ppt)						
June Test 1	June Test 2	August Test	November Test 1	November Test 2	February Test 1	February Test 2
52.88	32.10	32.94	65.56	31.74	47.31	31.86
EPA 537.1- Total PFAS Results: Date of Analysis (ng/L = ppt)						
June Test 1		August Test	November Test 1		February Test 1	
8.00		8.00	8.20		7.60	

**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. 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**.