



WASTEWATER PERFORMANCE REPORT



JULY 1, 2020 - JUNE 30, 2021

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4222 Westmont Drive Charlotte, NC 28217

I. General Information

Name of Regulated Entity and Responsible Person

City of Charlotte
Angela Charles, Director
Charlotte Water (CLTWater)
Administration Division
4222 Westmont Drive
Charlotte, NC 28217
704-336-4407

Applicable Permits

There are seven wastewater treatment plants (WWTP) owned and operated by Charlotte Water (CLTWater). One package plant, Oxford Glen WWTP was decommissioned in June 2021. Below is a list of these facilities and their applicable NPDES (National Pollutant Discharge Elimination System) permit number. Included with the list of facilities is the name of the Operator in Responsible Charge (ORC) at the facilities and the site telephone numbers.

WWTP	NPDES Permit Number	ORC	Phone
Irwin Creek WWTP	NC0024945	Jacob Bolick	704-336-2573
Mallard Creek WRF	NC0030210	Henry Eudy	704-336-1024
McAlpine Creek WWMF	NC0024970	Sandy Kim Neely	704-542-0736
McDowell Creek WWTP	NC0036277	Darrell DeWitt	704-336-1125
Sugar Creek WWTP	NC0024937	William Allen	704-432-2510
Ashe Plantation WWTP	NC0065749	Jeremy Nance	704-634-3389
Oxford Glen WWTP	NC0063584	Jeremy Nance	704-634-3389

Oxford Glen was decommissioned June 2021. In addition to those seven plants, CLTWater sends wastewater to the Rocky River Regional Wastewater Treatment Plant through an agreement with the Water and Sewer Authority of Cabarrus County (WSACC). CLTWater also accepts flow from Union County to McAlpine Creek WWMF.

WW COLLECTION	NCDWQ Permit Number	ORC	Phone
4100 W. Tyvola Rd.	WQCS00001	Steven Wroblewski	704-432-2748

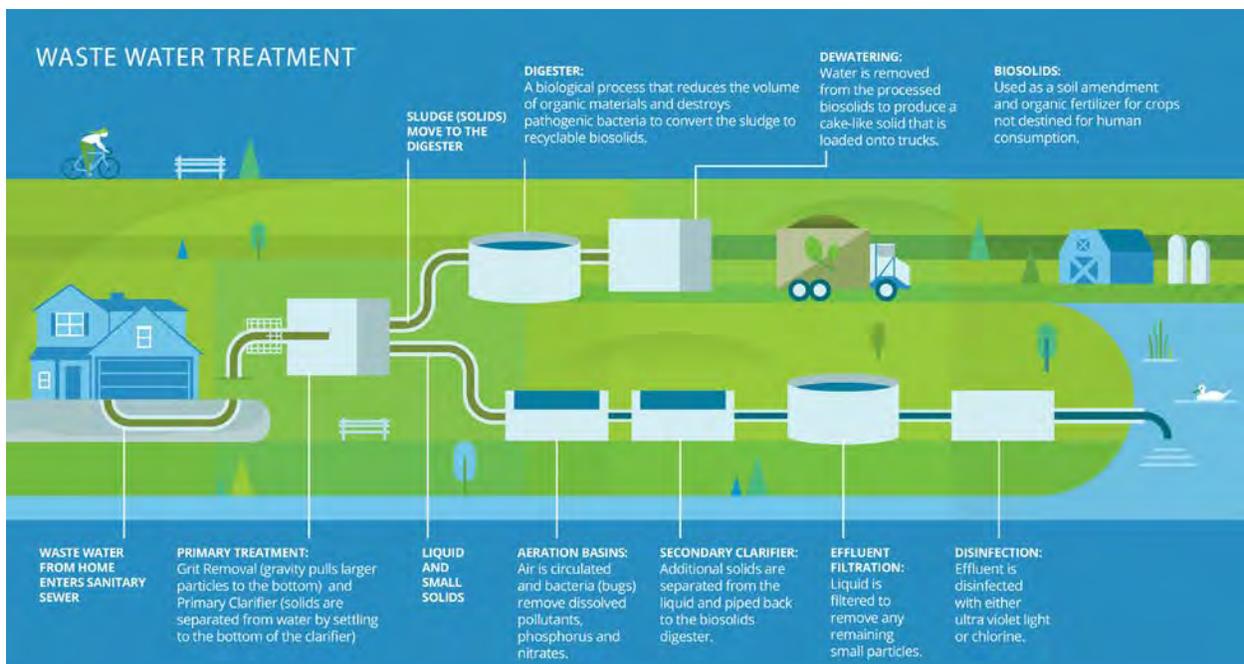
Description of collection and treatment systems

Charlotte Water (CLTWater) collects wastewater from approximately 276,498 households and businesses throughout the county. Wastewater is collected and directed (via gravity flow supported by sewage lift stations) to one of six CLTWater wastewater treatment

plants or the Rocky River Regional Plant (owned and operated by the Water and Sewer Authority of Cabarrus County) where it is treated. An average of 87.2 million gallons of wastewater is treated and discharged each day from CLTWater plants. CLTWater contributes an average of 5 million gallons a day (MGD) to the Rocky River Plant. CLTWater also treats roughly 1.4 MGD from Union County at CLTWater's McAlpine Creek Plant or roughly 3% of the 45.3 MGD treated at that plant.

More than 300 of CLTWater's 1,019 employees work to maintain 4,475 miles of collection pipelines and 78 wastewater lift stations throughout the county. The gravity wastewater pipes in this system range in size from 8 inches in diameter to 78 inches in diameter.

Each of CLTWater's wastewater treatment plants applies primary, secondary and advanced treatment to the waste stream. Large solid particles and inorganic materials are removed by screening and settling. The wastewater is treated biologically to remove dissolved pollutants. The waste stream passes through granular filters to remove very small particles that may not have been removed through the settling process. Finally, disinfection reduces bacterial and pathogenic materials. The treated water is released to the nearby creek.



1. **Primary Treatment**
Solid particles & objects are captured by screens, grit chambers, and primary clarifiers.
2. **Aeration/Secondary Treatment**
Wastewater is aerated to support growth of microorganisms that remove harmful pollutants.

3. Clarification

Solids and microorganisms settle out in large basins.

4. Advanced Treatment

Wastewater flows through granular filters to remove fine particles. Nutrient levels are reduced at McDowell and McAlpine Creek Wastewater Treatment Plants.

5. Disinfection

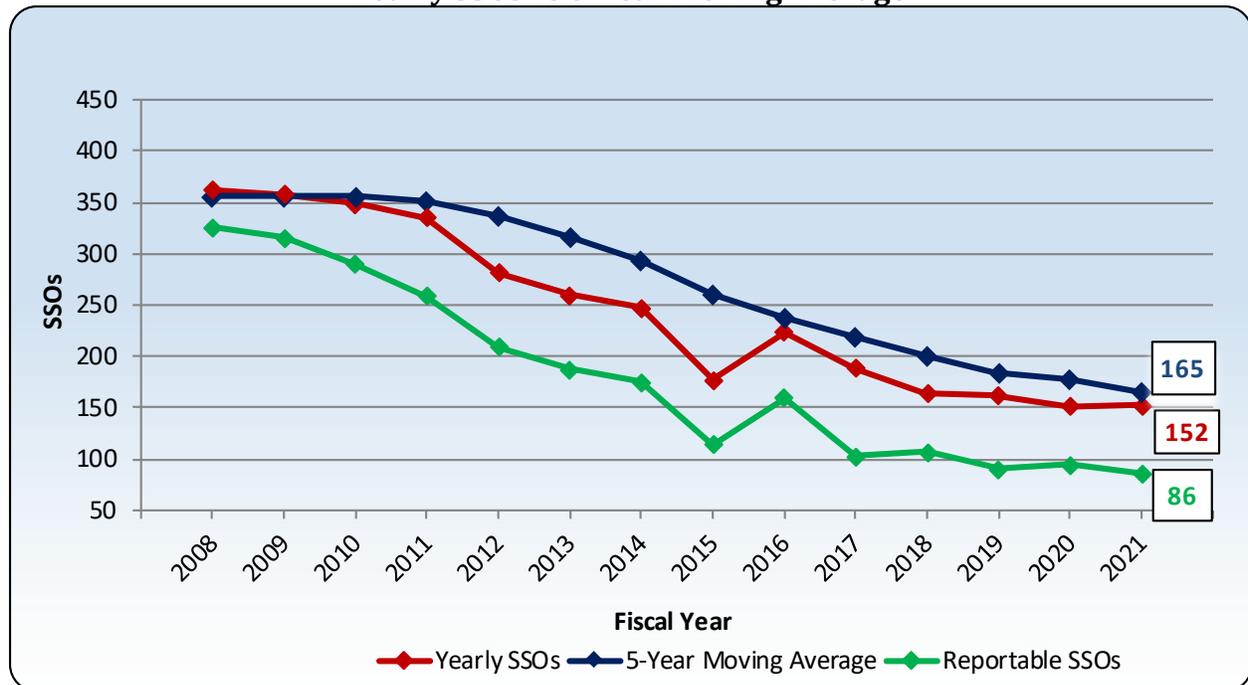
Water is disinfected to remove any remaining pathogens, and then the treated water is released into creeks.

II. Summary of System Performance

FY21 Performance

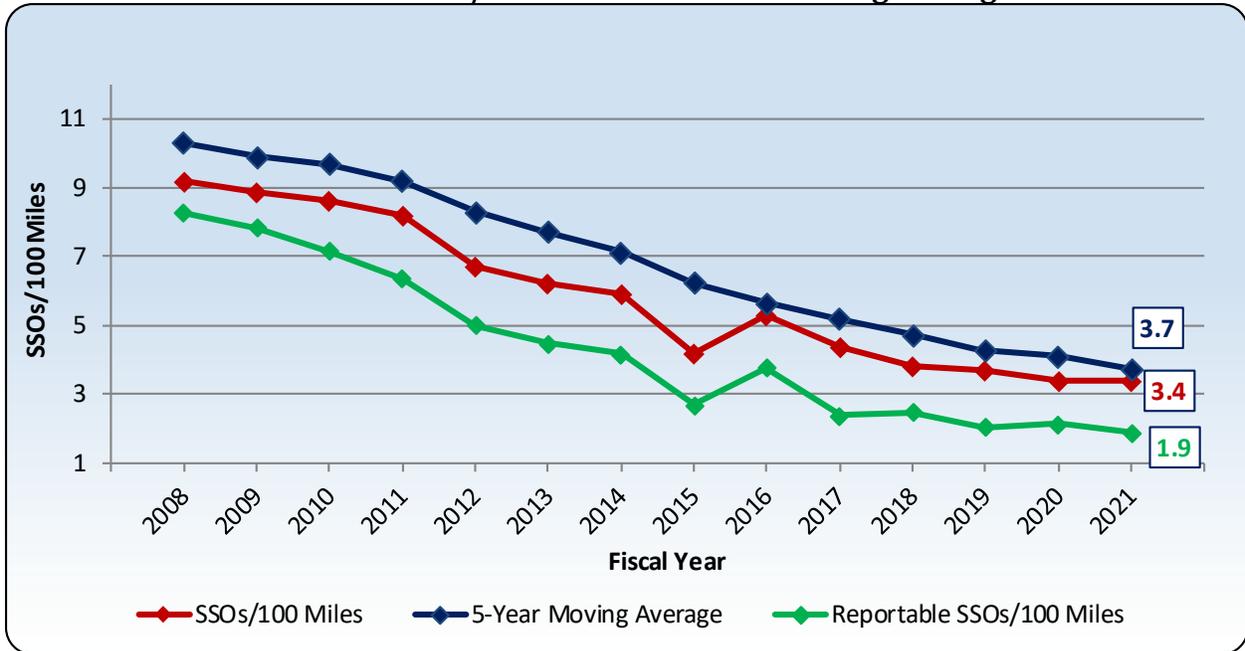
Charlotte Water successfully collected and treated 99.99 percent of the more than 31.8 billion gallons of wastewater the community produced in the past fiscal year. There were 152 sanitary sewer overflows (SSOs) in our community, an increase of one spill compared to the year before. Overall CLTWater has reduced spills by 64% since fiscal year 2007.

Yearly SSOs vs 5-Year Moving Average



The number of spills per 100 miles of pipe continued to decline in general from 9.2 in fiscal year 2008 to 3.41 spills in fiscal year 2021 as illustrated by the table on the following page.

Number of SSOs/100 Miles vs 5-Year Moving Average



Inspection crews and our customers find overflows. Overflows from the wastewater collection system are discovered during routine inspections of the system and also through reports from the public to the 311 customer service call center. CLTWater notifies media any time a sanitary sewer overflow results in 1,000 gallons or more reaching surface waters or any size overflow reaching recreational waters. A legal notice is posted in the Charlotte Observer when overflows of 15,000 gallons or more reach surface waters. Crews also use door hangers to notify customers when appropriate, which is a permit requirement.

This annual report includes all incidents where wastewater escaped out of a public manhole or public collection system pipe before reaching proper treatment, including spills less than required reporting thresholds (i.e. less than 1,000 gallons or any amount reaching surface water). There were 86 reportable spills (by state definition) during fiscal year 2021, 12 less than the fiscal year 2020 total of 98. All spill response protocols are followed regardless of the spill volume or reporting status. Private spills and sewer backups inside homes are not included. The report summarizes spills (both reportable to the State and SSOs that do not meet state definition) and other challenges at wastewater treatment plants.

CLTWater employees work 24 hours a day, 365 days per year to prevent and respond to overflows. Crews prevent overflows by clearing pipes of tree roots, wipes, and grease, as well as replacing broken and aging pipes. CLTWater has increased its efforts to educate customers about properly disposing of fats, oils and grease (FOG).

Performance Highlights

CLTWater celebrated some important milestones in FY2021 while taking numerous actions to prevent overflows and protect water quality through effective wastewater treatment.

- All seven wastewater treatment plants earned Peak Performance Awards from the National Association of Clean Water Agencies (NACWA) for the calendar year ending 2020. NACWA Peak Performance Awards recognize wastewater treatment professionals throughout the nation for protecting the environment and public health through outstanding treatment and discharge regulatory compliance.
 - McAlpine Creek Wastewater Treatment Plant was awarded its ninth Platinum Award for thirteen consecutive years of perfect compliance. (Five years of perfect compliance are needed to achieve the award.)
 - McDowell Creek Wastewater Treatment Plant earned their fourth Platinum Award, and their eighth out of last thirteen years.
 - Mallard Creek and Sugar Creek Wastewater Treatment Plants earned platinum awards for five years of perfect compliance needed to achieve the award
 - Oxford Glen, Ashe Plantation, and Irwin Creek earned Gold Awards for zero permit violations in a one-year period.
 - Over 8,000 compliance judgement points were met during the 2020 calendar year.
- 11.3 miles of wastewater pipe and 160 manholes were rehabilitated or replaced.
- 328.5 miles of wastewater pipe were treated with root control chemicals.
- 854 miles of wastewater lines were cleaned (including some multiple cleanings in the same location) by CLTWater Field Operations Staff and an additional 87 miles of pipe were cleaned by contractors.
- 229 wastewater service connections were replaced.
- 40 miles of rights of way were cleared by contractors to maintain access to off-street sanitary wastewater pipes and to help prevent root intrusions. An additional 66 miles were cleared by CLTWater staff.
- 279 miles of pipe were closed-circuit television recorded (CCTV) for inspection by CLTWater staff and contractors.
- There are 78 Wastewater Lift Stations serving the CLTWater service area. Staff performed 155 preventative maintenance/electrical tasks for a total of 2,803 work hours. This does not include daily/weekly station checks, wet well cleaning, emergency generator testing, or emergency/routine repairs. Stevens Creek Lift Station was added in fiscal year 2021. Bristol Farms, Caldwell Commons, Win Hollow, Brandywine, Williams Station, and Yorkmont were removed.
- McAlpine Creek Wastewater Treatment Plant captures and converts methane gas (a byproduct of wastewater treatment) into a fuel for electricity production and useful heat. In the past 12 months the Combined Heat & Power (CHP) system engine has

generated more than 5 billion kilowatt hours of energy. Since it started running, the CHP has generated in excess of 24 billion kilowatt hours of clean energy approaching \$1.054 million in gross revenue back to the City. Methane gas is also generated at Irwin, McDowell, and Mallard WWTPs. There, methane gas is used to generate heat required for anaerobic digestion to treat the solids produced during the treatment process.

Capital & Community Investment Highlights

Projects in Progress in FY21

- Belmont and Optimist Park Wastewater Pipe Replacement Project (Little Sugar Creek Tributary Trunk Sewer North Tryon area) is under way and will be complete by the end of September 2021. Approximately 6,327 LF of pipe is being upsized to serve the growing area around Belmont and Optimist Park neighborhoods. The project is an investment of \$12.3 million.
- Mallard Creek Wastewater Treatment Plant Rehabilitation and UV Upgrade Project consists of the rehabilitation and upgrade of the final clarifiers and their pumping stations, effluent filters, and UV disinfection system. Construction started in May 2020 with completion projected in October 2022.
- Stevens Creek Lift Station, Force Main & Gravity Sewer Project will serve the Goose Creek and Stevens Creek drainage basins, which includes the Town of Mint Hill. The project is the first step in providing public sewer service to an area that is predominantly on septic systems. This project will also facilitate the removal of a nearby package wastewater plant. The construction cost is \$20.375 million. Construction started late summer 2019 and will be completed by August 2021.
- Stevens Creek Phase 2 is under way and will be completed by Fall 2021. Approximately 4,600 linear feet of pipe is being upsized to serve the growing area. The project is an investment of \$1.5 million.
- Upper Taggart Creek Wastewater Pipe Replacement Project is under way and will be completed by Spring 2022. Approximately 10,200 linear feet of pipe is being upsized to serve the growing area. The project is an investment of \$20 million.

Projects Completed in FY21

- McAlpine Creek 54-inch Sanitary Sewer Rehabilitation Project (Part of a Large Diameter Sanitary Sewer Rehabilitation program) was completed and designing phase 2 and 3.
- Paw Creek Sewer Outfall Replacement Project upsized 13,000 LF of 18-inch and 24-inch pipe to serve growing area in western Mecklenburg County. The project started in April 2019. This is an investment of \$4.5 million.



Fats, Oils and Grease Education Highlights

- Charlotte Water started a fats, oil and grease reduction effort during the late 1990s to educate customers about food related clogs that lead to sanitary sewer overflows. In 2017, Charlotte Water rebranded to FlowFree to focus on other overflow contributors now that grease related spills continue to decline.
- CLTWater staff inspected grease-handling facilities at 3,287 food service establishments and restaurants (not including follow-up inspections) to ensure proper grease disposal. BMP Posters were distributed to the facilities to post. (2,112 posters distributed)
- Staff issued 44 Notices of Deficiency (NOD) of which 34 returned to compliance and 10 are still under investigation.
- Staff issued 0 Notices of Violation (NOV).
- 8 grease traps were installed by businesses to fulfill NOD requirements.
- Inspectors mailed information to 1,025 customers near spill sites and handed out information after spill events to 2976 customers in apartments/multi-family complexes.
- Staff conducted educational presentations to more than 160 children and adults.
- Staff continues to provide bilingual door hangers and promotional items for property managers to give to new residents. Educational posters were also provided for managers to post. (1,221 posters provided)
- A multi-family outreach team was created in the System Protection division in 2019 that worked closely with the communications team to create a multi-pronged outreach plan for multi-family units that were causing blockages or SSO's in the system. The plan included targeted doorhangers, pop up events, meetings with facilities staff and residents, educational materials and if necessary, enforcement techniques.
- Communications staff posted social media alerts on Nextdoor to inform residents when spills occurred exceeding 1,000 gallons in creeks or any amount that reached recreational water.

Continuing Challenges

Wastewater Collection Challenges

The greatest continuing wastewater challenge in this community – and in others across the U.S. – is sewage overflows. Of the 152 sewer spills that occurred; debris, grease, and roots accounted for most of the sanitary sewer overflow causes.

The largest individual spill was on June, 7th 2021 near 5601 All Saints Lane in Charlotte, NC. An estimated 17,550 gallons reached McMullen Creek in the Catawba River watershed. The

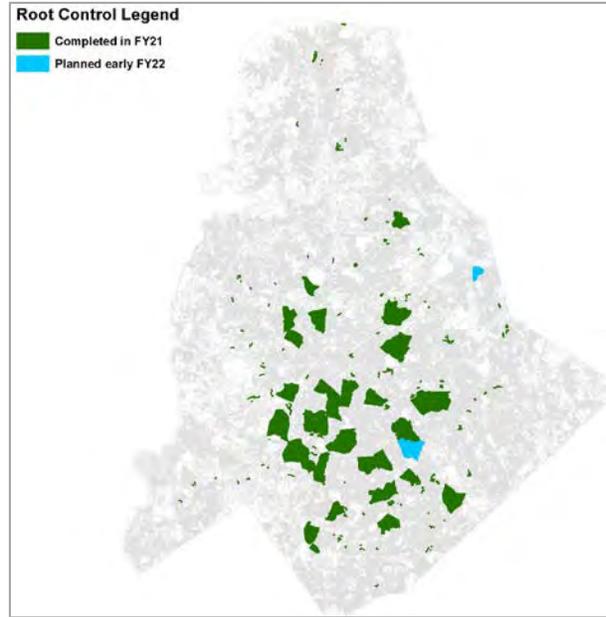
overflow was caused by a pipe failure. Crews quickly found the overflow and began pumping wastewater around the broken pipe to stop the discharge into the creek.

Sixteen spills were caused by private contractors.

Thirty spills were 100 gallons or less.

The number of overflows caused by tree roots are up slightly from the previous year. CLTWater has responded with a robust tree root control program.

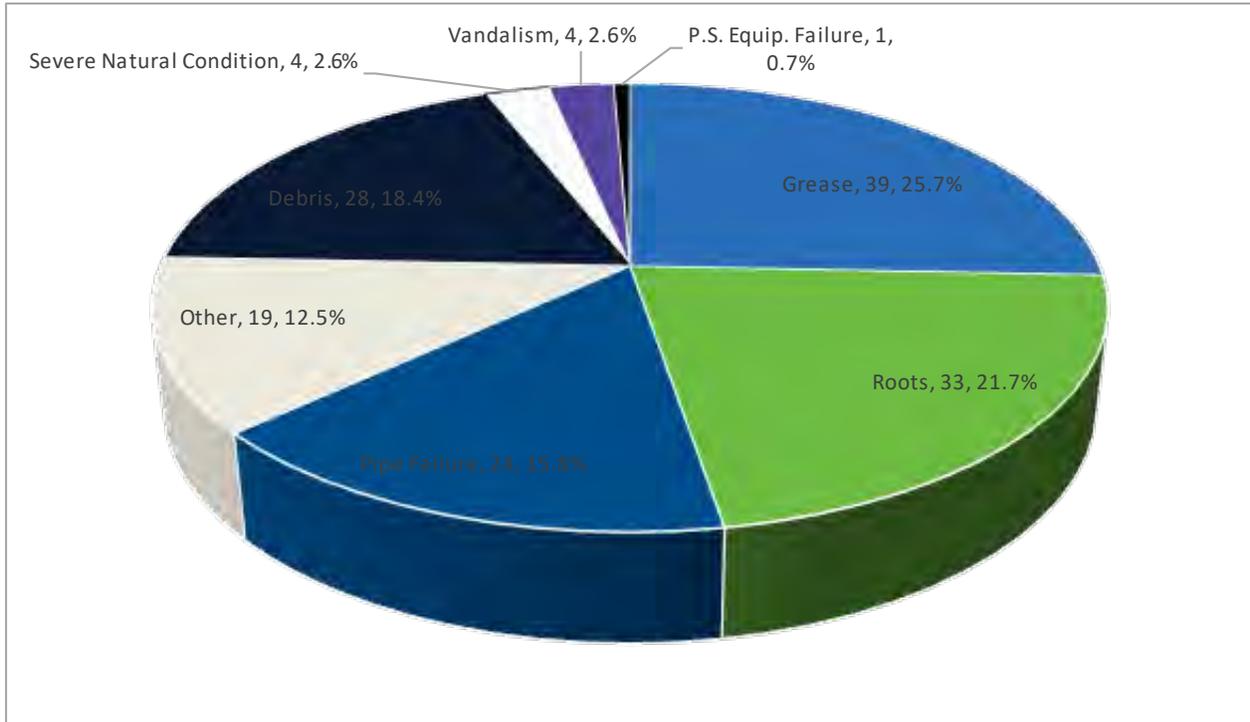
Mainline blockages, by any cause and including those unrelated to overflows, have decreased from 114 in fiscal year 2020 to 102 in fiscal year 2021.



Residential grease blockages were the leading cause of overflows for fiscal year 2021. This could be possibly the result of more people cooking at home due to the pandemic. Charlotte Water responded by conducting “cleaning blitzes” on the weekends concentrating all crews and equipment in a specific area.



Fiscal Year 2021 Overflows by Primary Cause



Grease and other blockages that lead to sewer overflows are cleared by CLTWater crews using various cleaning methods, including mechanical rodders and truck-mounted water jets. The spilled wastewater can sometimes be captured and pumped back into the sewer system. After cleaning, if follow up CCTV discovers damaged pipe, a repair is initiated based on CLTWater’s “Find and Fix” protocols.

CLTWater Rapid Response Crews are quick to respond when notified of a possible spill. Crews responded to more than 92.1 percent of the spills within 60 minutes and 100 percent of the spills within 120 minutes. The average for all response was 21.57 minutes. The state standard for response is 120 minutes or less.

Field Operations – Critical Assets Group

Regular inspections are performed by Field Operation - Critical Assets group which was established to inspect all high priority and vulnerable lines. The Critical Assets group has expanded their inspection responsibilities to include additional areas not previously considered vulnerable. In addition, as part of a collaboration effort with the Mecklenburg County Water Quality group this plan has resulted in finding numerous stream bank erosion problems, not previously seen, which threaten sanitary sewer lines. A contract for streambank restoration, which protects sanitary lines, was established several years ago and has been renewed. The team also expanded CLTWater’s preventative overflow measures by installing 174 SmartCover level sensors. Crews also added a drone to inspect previously inaccessible locations and to assist with streambank inspections.

Wastewater Treatment Plant Challenges

Charlotte Water's wastewater treatment plants met 99.99 percent of all discharge limit tests set forth by our NPDES permits. Staff continues to improve maintenance capabilities and overall performance. Major rehabilitation and improvement projects help maintain compliance.

On June 11, 2021 a power outage caused an interruption in UV disinfection at the McDowell Creek Wastewater Treatment Plant. No permit limits were violated, but 127,000 gallons were discharged without full disinfection.

Charlotte Water System Protection

CLTWater System Protection operates within CLTWater's service area to enforce federal, state, and local regulations pertaining to discharges to the sanitary sewer, including protection of workers and treatment processes from pollutants harmful to people or the environment. System Protection includes the Industrial Pretreatment Program and the Commercial Source Program.

The Pretreatment Program identifies, permits, and regulates industrial users and others to keep unsuitable discharges out of the wastewater treatment plants. The Commercial Source Program, also referred to as Flow Free, inspects and regulates commercial users, such as food service establishments, to keep unsuitable discharges such as fats, oils and grease out of the collection system and wastewater treatment plants.

While industrial and commercial compliance is extremely high, identifying sources of potentially harmful discharges is an ongoing challenge. In fiscal year 2021, the Trunkline Monitoring program also continued, enabling CLTWater's System Protection and Water Quality staff to closely observe what industrial, institutional, and commercial customers discharge to the wastewater treatment plants, identify potential problem areas, and protect the collection system, wastewater line workers, treatment plants and the environment.

- There were over 120 industrial inspections and site visits in the past fiscal year. As part of the Commercial Source program, food service establishments and other grease producing businesses are identified and inspected on an annual basis. Compliance is also monitored using a document tracking software system.
- During fiscal year 2021 the Commercial Source program continued their outreach program specifically focused on multi-family housing properties.
- CLTWater honored 22 local companies with Environmental Excellence Awards in fiscal year 2021 for compliance during calendar year 2020 including:
 - 4 Platinum recipients for at least five consecutive years of Gold level compliance and reporting,
 - 8 Gold recipients for 100% compliance with permit limits and reporting, and
 - 10 Silver recipients for 90% compliance with permit limits and 100% compliance with reporting.

- CLTWater recorded 217 industrial permit limit violations for effluent samples collected by Significant Industrial Users (SIU) during the past fiscal year, resulting in a Notice of Violation, Notice of Non-Compliance, Administrative Order, or similar assessment.
- 28 Notices of Violation with Civil penalties were assessed to users during the fiscal year for permit limit exceedances and other violations.

Wastewater Capacity Needs

Charlotte Water is currently in the design and permitting phase for its sixth main WWTP, the Stowe Regional Water Resources Recovery Facility (WRRF), and currently plans to have Phase 1 of the WRRF online in 2025. Phase 2 will be planned for implementation in the future. There are several conveyance projects associated with the development of the Stowe Regional WRRF that will change the current WWTP service area delineation. Two new pump stations will be built to allow Charlotte Water to support the region with wastewater service by conveying wastewater from the City of Mount Holly and City of Belmont in Gaston County. The pump stations will pump wastewater under the Catawba River and into the Charlotte Water wastewater system. Similar to Union County, the agreements between Charlotte Water and Mount Holly, and Belmont, are interlocal agreements (ILA) for wholesale wastewater conveyance and treatment.

In 2007 a study of the McAlpine, Irwin and Sugar creek basins was completed to help identify our community's future wastewater treatment capacity needs through the year 2030. Projects at the Irwin Creek and Sugar Creek WWTPs have been completed last year, bringing the reliable treatment capacity up to 15 and 16 MGD, respectively. Significant flow and load reduction at the McAlpine WWTP will be accomplished by converting the Long Creek Lift Station into the Stowe Regional WRRF, allowing wastewater flows from the western part of Mecklenburg county to be treated in their native watershed basin.

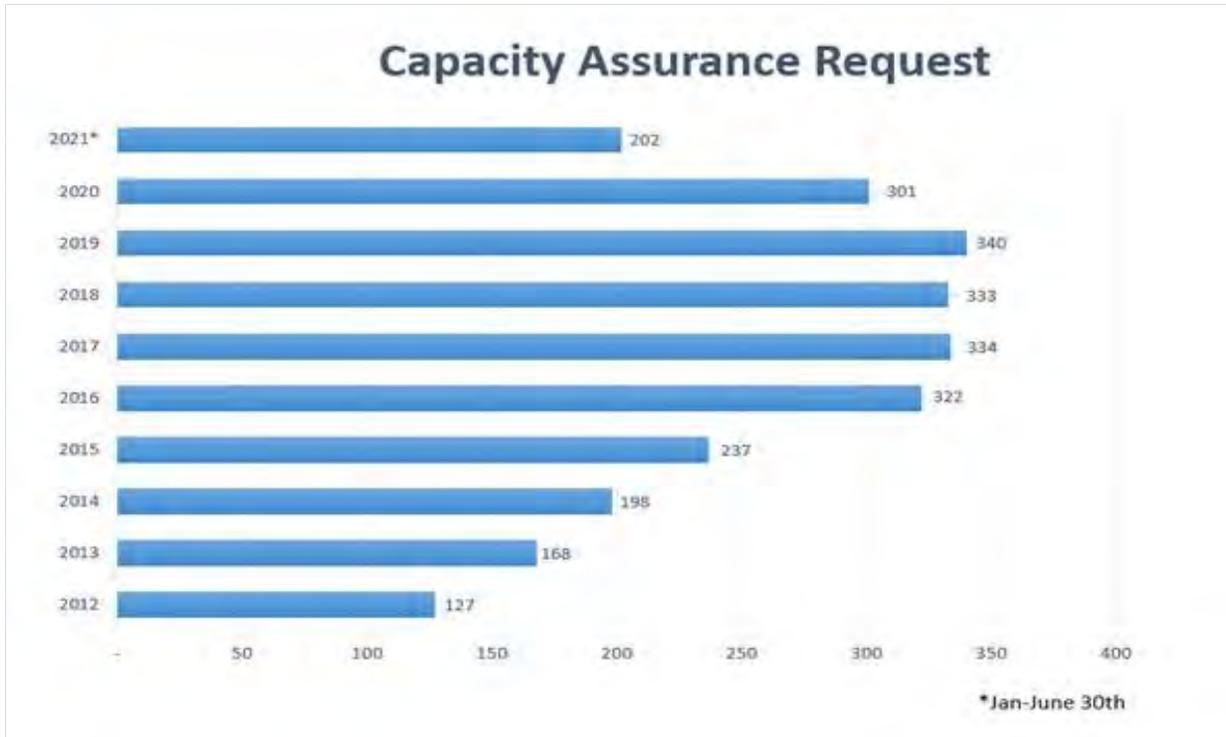
Charlotte Water's Wastewater Master Plan is a comprehensive planning effort to evaluate system needs across the entire wastewater system. This planning effort will provide a guiding framework and vision for system performance as well as a capital expenditure roadmap to ensure priorities are addressed in a cost-effective manner. The master plan's completion is expected to be in Fall 2021.

Major studies of the Mallard and McDowell sewer basins have been completed and provide recommendations to address existing collection system and treatment capacity issues. In accordance with the recommendation from the Mallard basin study, work is well underway to expand the Mallard Creek WRF capacity from 12 to 13.1 MGD by November 2022 with additional phases of expansion to follow. Mallard phase 1 expansion will bring capacity up to 16 MGD in October 2026. The granular activated sludge pilot project at the McDowell WWTP was completed last year. Evaluation of this pilot study will determine the long term effectiveness of this technology at the McDowell WWTP. Expansion of the McDowell treatment facility is expected to begin within the next five years.

The 1990 engineering study of the area surrounding Lake Norman and Mountain Island Lake outlined appropriate areas where low pressure sanitary sewer, which can be costly to maintain for homeowners and the utility, was deemed appropriate for conveying wastewater to a treatment facility. In late 2021, this study will be updated to capture development and system configuration changes that have occurred over the past 30 years. The update will also utilize GIS to identify on a map where low pressure sewer services are a feasible option as redevelopment occurs and provide a framework for CLTWater to address plans seeking to implement low pressure sewer around the lakes as well as throughout the county.

CLTWater’s Capacity Assurance Program (CAP) was implemented on January 1, 2009. CAP helps CLTWater prevent sanitary sewer overflows (SSOs) that could be caused by adding too many customers’ wastewater flow to an existing pipe. Developers are encouraged to apply for a CAP review during the early stages of requesting building permits or rezoning. This review process is performed at no cost to the applicant. Engineers analyze hydraulic models, past spills in the area and other field data to verify that there is adequate capacity in the pipes downstream. If no major sewer capacity limitations are found during the review, applications are generally approved in 30 days. Some reviews lead to identification of capital pipeline projects to improve the service level to our current customers as well as accommodate projected development.

Examples of projects identified from the CAP reviews are mentioned on page 6.



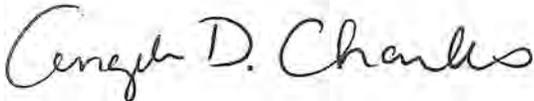
III. Notification

Sanitary sewer overflow and wastewater treatment plant details are included in Sections V and VI.

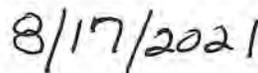
This report is available to the users or customers of this system by visiting <http://charlottewater.org>. Printed copies are available at the Charlotte-Mecklenburg Government Center at 600 E. Fourth Street, Charlotte, NC 28202, Charlotte Water buildings at 4222 Westmont Drive, Charlotte, NC 28217 and at 5100 Brookshire Boulevard, Charlotte, NC 28216. Customers of this system will receive a summary version of this report and will be notified of the availability of this comprehensive version via a bill insert in the September water bill. A news release will be issued to local media outlets. In addition, the summary version will be translated into Spanish and advertised during the month of September in a regional Spanish-speaking newspaper. The Spanish version will also be on the Charlotte Water website.

IV. Certification

I certify under penalty of law that this report is complete and accurate to the best of my knowledge. I further certify that this report has been made available to the users or customers of the named system and that those users have been notified of its availability.



Angela Charles, Director
Charlotte Water



Date

V. Listing of Sewer Spills

The following is a list of spills (in gallons) from the public wastewater system that occurred between July 1, 2020 and June 30, 2021.

Date	Volume (Gallons)	Volume to Surface Water	Surface Water Name	Fish Kill?	Address	Primary Cause
7/1/2020	680	340	Sugar Creek	No	436 Cone Av, Pineville	Other - Contractor Construction Damage
7/8/2020	2000	0	McDowell Creek	No	15806 Agincourt Dr, Huntersville	Grease
7/8/2020	120	0	Lake Norman	No	18904 Peninsula Point Dr, Cornelius	Other - Contractor Construction Damage
7/15/2020	225	225	Steele Creek	No	13500 S Tryon St.	Grease
7/18/2020	1170	1170	Stewart Creek (Irwin)	No	2736 Pitts Dr.	Grease
7/22/2020	440	440	McMullen Creek	No	10132 Standing Stone Ct	Debris In Line
7/24/2020	30	0	McDowell Creek	No	500 S Old Statesville Rd, Huntersville	Other - Contractor Construction Damage
7/25/2020	950	950	Campbell Creek (McAlpine)	No	5821 Reddman Rd.	Grease
7/26/2020	94	94	McAlpine Creek	No	1340 Fox Run Dr.	Grease
8/4/2020	449	449	Taggart Creek (Sugar)	No	2730 Queen City Dr.	Pipe Failure
8/8/2020	188	188	Briar Creek	No	2135 Brookwood Rd.	Roots
8/10/2020	360	360	Irwin Creek	No	4000 Stuart Andrew Bv.	Other - Contractor Construction Damage
8/14/2020	330	330	Irwin Creek	No	3605 S Tryon St.	Other
8/16/2020	260	120	Irwin Creek	No	500 Fairwood Ave.	Grease

Date	Volume (Gallons)	Volume to Surface Water	Surface Water Name	Fish Kill?	Address	Primary Cause
8/16/2020	61	0	Upper Little Sugar Creek	No	2222 Parson St.	Grease
8/28/2020	3830	3830	Briar Creek	No	4140 Somerdale Ln.	Pipe Failure
9/16/2020	188	0	Lake Wylie	No	17911 Culross Ln.	Other - Contractor Construction Damage
9/19/2020	32	0	Steele Creek	No	15331 Dehavilland Dr.	Roots
9/22/2020	255	255	Upper Little Sugar Creek	No	3106 N Davidson St.	Other - Contractor Construction Damage
9/28/2020	1350	1350	Lower Little Sugar Creek	No	1416 E Morehead St.	Other
9/28/2020	580	290	Sugar Creek	No	2348 National Av.	Vandalism
9/29/2020	130	130	McMullen Creek	No	7940 Whistlestop Rd.	Other - Contractor Construction Damage
10/5/2020	471	471	Briar Creek	No	632 Seneca Pl.	Roots
10/6/2020	1550	155	McDowell Creek	No	8312 Bellingham Ct, Huntersville	Debris In Line
10/8/2020	105	105	Irwin Creek	No	400 Remount Rd.	Grease
10/9/2020	651	0	Paw Creek	No	6900 Wilkinson Bv.	Debris In Line
10/11/2020	980	980	McDowell Creek	No	216 Greenway St, Huntersville	Roots
10/19/2020	1900	1900	Stewart Creek (Irwin)	No	1808 W Morehead St.	Pipe Failure
10/22/2020	135	0	Steele Creek	No	13628 Walkers Creek Dr.	Grease
10/25/2020	240	240	McMullen Creek	No	516 Nottingham Dr.	Pipe Failure
10/28/2020	305	305	Lake Norman	No	20026 Shearwater Point Dr, Cornelius	Other
10/28/2020	275	275	Mallard Creek	No	2110 Kumara Rd.	Debris In Line
11/2/2020	40	0	Four Mile Creek	No	2639 Alanby Ln.	Pipe Failure

Date	Volume (Gallons)	Volume to Surface Water	Surface Water Name	Fish Kill?	Address	Primary Cause
11/5/2020	775	0	Lake Wylie	No	18905 Bankhead Rd.	Other - Contractor Construction Damage
11/5/2020	4500	4500	Beaverdam Creek	No	10025 Glenburn Ln.	Debris In Line
11/9/2020	2400	2000	Toby Creek	No	430 E McCullough Dr.	Grease
11/10/2020	1232	1232	Lower Little Sugar Creek	No	713 Brookside Av.	Pipe Failure
11/11/2020	190	0	Catawba River	No	18911 Youngblood Rd.	Other
11/12/2020	900	900	Torrence Creek	No	216 Greenway St, Huntersville	Severe Natural Condition
11/12/2020	4200	4200	McIntyre Creek	No	4332 Hyde Park Dr.	Severe Natural Condition
11/12/2020	3600	3600	Little Hope Creek	No	1026 Montford Dr.	Severe Natural Condition
11/16/2020	50	0	Sugar Creek	No	3221 Stafford Dr.	Roots
11/16/2020	600	500	Toby Creek	No	8536 Alumni Wy.	Debris In Line
11/16/2020	4250	4250	Taggart Creek (Sugar)	No	4642 Wilkinson Bv.	Pipe Failure
11/16/2020	150	0	Upper Little Sugar Creek	No	1000 Blythe Bv.	Grease
11/17/2020	220	220	Briar Creek	No	3100 Rodman St.	Grease
11/18/2020	105	105	Irwin Creek	No	1701 West Bv.	Grease
11/21/2020	38	0	McAlpine Creek	No	7942 Oratorio Pl.	Roots
11/23/2020	1200	700	Mallard Creek	No	620 W W T Harris Bv.	Vandalism
11/25/2020	900	900	Sugar Creek	No	3600 Philemon Av.	Roots
11/27/2020	46	0	Four Mile Creek	No	4722 Pineland Pl.	Grease
11/28/2020	31	0	Lower Little Sugar Creek	No	10200 Kilmory Tr.	Roots

Date	Volume (Gallons)	Volume to Surface Water	Surface Water Name	Fish Kill?	Address	Primary Cause
12/4/2020	832	832	Taggart Creek (Sugar)	No	5421 Old Dowd Rd.	Grease
12/6/2020	129	129	Lower Little Sugar Creek	No	5524 South Bv.	Grease
12/6/2020	270	200	Irwin Creek	No	2439 Carmine St.	Roots
12/12/2020	1090	800	Irwin Creek	No	1546 Walton Rd.	Debris In Line
12/15/2020	1835	1835	Sugar Creek	No	3928 Selwyn Av.	Other - Contractor Construction Damage
12/23/2020	1359	1359	Four Mile Creek	No	1826 Kings Manor Ct, Matthews	Other
12/28/2020	162	0	McAlpine Creek	No	809 Wagon Hill Rd, Matthews	Grease
12/30/2020	264	264	Irwin Creek	No	105 S Sycamore St.	Grease
12/30/2020	209	0	McDowell Creek	No	16021 Prestwoods Ln, Huntersville	Roots
1/4/2021	89	0	Reedy Creek	No	5515 Silchester Ln.	Roots
1/6/2021	148	0	McMullen Creek	No	11908 Rock Canyon Dr.	Pipe Failure
1/6/2021	120	0	McDowell Creek	No	21100 Catawba Av, Cornelius	Pipe Failure
1/9/2021	117	0	Briar Creek	No	353 Fannie Cr.	Pipe Failure
1/9/2021	159	0	Steele Creek	No	15909 White Barn Ct.	Debris In Line
1/15/2021	2620	2620	Little Hope Creek	No	4912 Murrayhill Rd.	Pipe Failure
1/17/2021	279	0	Lower Little Sugar Creek	No	2500 Jefferson Davis St	Pipe Failure
1/17/2021	1355	900	Kings Branch	No	905 Pineville Point Av.	Roots
1/19/2021	360	0	Catawba River	No	18821 Bankhead Rd.	Other - Contractor Construction Damage
1/19/2021	906	906	McMullen Creek	No	1308 Kingscross Dr.	Grease

Date	Volume (Gallons)	Volume to Surface Water	Surface Water Name	Fish Kill?	Address	Primary Cause
1/19/2021	2200	2200	Lower Little Sugar Creek	No	3819 Chandworth Rd.	Pipe Failure
1/20/2021	238	0	Lake Norman	No	20617 Bethelwood Ln, Cornelius	Pipe Failure
1/21/2021	124	0	McMullen Creek	No	5906 Grosner Pl.	Roots
1/22/2021	310	310	Briar Creek	No	3145 Maywood Dr.	Debris In Line
1/27/2021	1090	872	Toby Creek	No	7313 Balancing Rock Ct.	Grease
1/28/2021	985	985	Kings Branch	No	905 Pineville Point Av.	Debris In Line
1/29/2021	100	0	Goose Creek	No	4311 Phillips Spring Ct, Mint Hill	Pipe Failure
1/29/2021	104	0	McAlpine Creek	No	1133 Dooley Dr.	Grease
1/30/2021	160	160	McAlpine Creek	No	6217 Glenridge Rd, 28211	Roots
2/4/2021	37	0	Lower Little Sugar Creek	No	2327 Catalina Av.	Debris In Line
2/4/2021	980	980	Mallard Creek	No	11201 Shandon Way Ln.	Grease
2/5/2021	1100	900	Mallard Creek	No	8604 Cliff Cameron Dr.	Grease
2/5/2021	58	58	Steele Creek	No	12900 Seascape Ln.	Roots
2/6/2021	980	0	Stewart Creek (Irwin)	No	5303 Grass Ridge Dr.	Debris In Line
2/9/2021	2400	2400	Lower Little Sugar Creek	No	1300 Central Av, 28205	Pipe Failure
2/11/2021	44	0	Back Creek	No	2509 Wingdale Dr.	Debris In Line
2/12/2021	300	300	McAlpine Creek	No	6514 Rollingridge Dr.	Roots
2/12/2021	640	640	Briar Creek	No	5001 Erickson Rd.	Roots
2/14/2021	525	0	Upper Little Sugar Creek	No	5935 Amberly Ln.	Debris In Line
2/15/2021	62	62	Sugar Creek	No	421 Wilbrow Cr.	Other - Contractor Construction Damage
2/15/2021	47	0	Upper Little Sugar Creek	No	1607 Harrill St, 28205	Debris In Line

Date	Volume (Gallons)	Volume to Surface Water	Surface Water Name	Fish Kill?	Address	Primary Cause
2/16/2021	245	245	McMullen Creek	No	900 Bobby Ln.	Grease
2/17/2021	255	150	Lake Norman	No	19308 Yachtman Dr.	Pipe Failure
2/18/2021	62	0	Four Mile Creek	No	11212 Quiet Wood Ct, Cornelius	Roots
2/19/2021	1030	1030	Little Hope Creek	No	4526 Bradbury Dr.	Grease
2/19/2021	130	0	Irwin Creek	No	2800 L D Parker Dr.	Roots
2/20/2021	119	0	Four Mile Creek	No	1108 Sunnyview Cr, Matthews	Roots
2/21/2021	50	0	Stewart Creek (Irwin)	No	2009 Heywood Av.	Roots
2/23/2021	92	0	McMullen Creek	No	3701 Craig Av.	Roots
2/24/2021	62	0	McAlpine Creek	No	6520 E Independence Bv.	Other - Contractor Construction Damage
2/24/2021	90	0	Lake Wylie	No	17206 Snug Harbor Dr.	Other - Contractor Construction Damage
2/25/2021	98	0	Mallard Creek	No	4431 Brandie Glen Rd.	Grease
2/26/2021	1065	1065	Sugar Creek	No	940 Crafters Ln.	Debris In Line
3/10/2021	3600	3600	Long Creek	No	11205 Reames Rd, 28269	Debris In Line
3/10/2021	327	327	Irwin Creek	No	4239 Saquache Dr.	Debris In Line
3/13/2021	55	0	McMullen Creek	No	4411 Magnolia Bridge Rd.	Roots
3/15/2021	1150	300	Irwin Creek	No	3100 Statesville Rd Apartment B	Grease
3/20/2021	243	0	Lower Little Sugar Creek	No	231 N Caldwell St.	Debris In Line
3/21/2021	92	0	McMullen Creek	No	4026 Chevington Rd.	Roots
3/23/2021	688	688	Briar Creek	No	1425 Eastcrest Dr.	Grease
3/23/2021	711	711	Lower Little Sugar Creek	No	7134 Thornrose Dr.	Debris In Line
3/24/2021	688	0	Briar Creek	No	421 N Wendover Rd.	Vandalism
3/24/2021	1	0	Briar Creek	No	1100 Central Av.	Debris In Line

Date	Volume (Gallons)	Volume to Surface Water	Surface Water Name	Fish Kill?	Address	Primary Cause
3/25/2021	1176	1176	Paw Creek	No	8600 Moores Chapel Rd	Roots
3/26/2021	458	458	Lake Norman	No	21242 Blakeney Shores Dr, Cornelius	Pump Station Equipment Failure
3/28/2021	939	200	Toby Creek	No	8538 N Tryon St, 28262	Grease
3/28/2021	610	610	Edwards Branch	No	2715 Albany Ln.	Roots
3/31/2021	415	0	Catawba River	No	8911 Rockrose Wy.	Grease
4/2/2021	610	305	Campbell Creek (McAlpine)	No	7533 Briardale Dr.	Roots
4/7/2021	91	0	Lower Little Sugar Creek	No	212 N Polk St, Pineville	Other - Contractor Construction Damage
4/8/2021	131	131	Four Mile Creek	No	2043 Massy Clark Dr, Matthews	Debris In Line
4/12/2021	204	204	Upper Little Sugar Creek	No	1010 E 10th St, 28204	Debris In Line
4/13/2021	222	0	Reedy Creek	No	7531 Linda Lake Dr.	Roots
4/15/2021	6105	6105	Irwin Creek	No	2732 Watson Dr.	Grease
4/15/2021	798	798	Irwin Creek	No	450 W Worthington Av.	Grease
4/20/2021	280	0	Kings Branch	No	711 Farmhurst Dr.	Vandalism
4/21/2021	1359	1359	Briar Creek	No	614 S Sharon Amity Rd.	Pipe Failure
4/26/2021	711	0	Upper Mountain Island Lake	No	1620 Mt Isle Harbor Dr.	Pipe Failure
4/26/2021	150	150	Briar Creek	No	3223 Central Av.	Pipe Failure
5/1/2021	474	0	Upper Little Sugar Creek	No	324 N Mcdowell St.	Grease
5/2/2021	105	0	Briar Creek	No	2732 Temple Ln.	Debris In Line
5/13/2021	600	300	Four Mile Creek	Yes	3401 Windbluff Dr.	Roots
5/13/2021	86	0	Long Creek	No	9245 Kimmel Ln.	Roots
5/14/2021	396	0	Upper Little Sugar Creek	No	225 N Caldwell St.	Pipe Failure

Date	Volume (Gallons)	Volume to Surface Water	Surface Water Name	Fish Kill?	Address	Primary Cause
5/15/2021	240	0	Irwin Creek	No	223 N Graham St.	Debris In Line
5/19/2021	820	700	Kings Branch	No	6035 Tyvola Glen Cr.	Debris In Line
5/21/2021	1730	1720	Mallard Creek	No	6230 Hackberry Creek Tl, 28269	Grease
5/23/2021	46	0	Lake Wylie	No	17525 Snug Harbor Rd.	Other - Contractor Construction Damage
5/26/2021	440	440	McMullen Creek	No	1941 Summey Av.	Grease
5/27/2021	354	0	Taggart Creek (Sugar)	No	4311 Major St.	Roots
5/28/2021	138	0	Reedy Creek	No	10347 Battle Ct.	Roots
6/2/2021	100	0	Mallard Creek	No	13307 Circle Dr.	Other - Contractor Construction Damage
6/5/2021	73	0	Upper Little Sugar Creek	No	1821 Cumberland Av.	Grease
6/7/2021	17550	17550	McMullen Creek	No	5601 All Saints Ln.	Pipe Failure
6/10/2021	70	0	Torrence Creek	No	13424 Philip Michael Rd, Huntersville	Roots
6/15/2021	1540	1540	McMullen Creek	No	5834 McNair Rd.	Debris In Line
6/16/2021	375	0	Campbell Creek (McAlpine)	No	5316 Kimmerly Glen Ln.	Grease
6/20/2021	2150	2150	Campbell Creek (McAlpine)	No	6812 Wallace View Ct.	Grease
6/24/2021	216	0	Kings Branch	No	400 Edgegreen Dr.	Grease
6/27/2021	3800	3800	Lower Little Sugar Creek	Yes	3222 Idlewood Cr.	Roots
6/29/2021	810	405	Lake Norman	No	17534 Paradise Cove Ct, Cornelius	Other - Contractor Construction Damage

TOTAL NUMBER OF FY2021 COLLECTION SYSTEM SPILLS:

152

Volume Safely Collected, Treated & Discharged During Fiscal Year 2021: 31,832,000,000 Gallons (99.99%)

Volume Spilled: 127,773 Gallons

VI. Permit Compliance and Reporting Violations, by plant

Ashe Plantation WWTP -- NPDES Permit #NC0065749

MONTH	PERMIT LIMIT VIOLATIONS	REPORTING REQUIREMENT VIOLATIONS
July, 2020	None	None
August, 2020	None	None
September, 2020	None	None
October, 2020	None	None
November, 2020	None	None
December, 2020	None	None
January, 2021	None	None
February, 2021	None	None
March, 2021	None	None
April, 2021	None	None
May, 2021	None	None
June, 2021	None	None

Irwin Creek WWTP -- NPDES Permit #NC0024945

MONTH	PERMIT LIMIT VIOLATIONS	REPORTING REQUIREMENT VIOLATIONS
July, 2020	None	None
August, 2020	None	None
September, 2020	None	None
October, 2020	None	None
November, 2020	None	None
December, 2020	None	None
January, 2021	None	None
February, 2021	None	None
March, 2021	None	None

April, 2021	None	None
May, 2021	None	None
June, 2021	None	None

Mallard Creek WRF -- NPDES Permit #NC0030210

MONTH	PERMIT LIMIT VIOLATIONS	REPORTING REQUIREMENT VIOLATIONS
July, 2020	None	None
August, 2020	None	None
September, 2020	None	None
October, 2020	Weekly Avg. CBOD, Deemed a deficiency, not a violation by NC DEQ	None
November, 2020	None	None
December, 2020	None	None
January, 2021	None	None
February, 2021	None	None
March, 2021	None	None
April, 2021	None	None
May, 2021	None	None
June, 2021	None	None

McAlpine Creek WWMF -- NPDES Permit #NC0024970

MONTH	PERMIT LIMIT VIOLATIONS	REPORTING REQUIREMENT VIOLATIONS
July, 2020	None	None
August, 2020	None	None
September, 2020	None	None
October, 2020	None	None
November, 2020	None	None
December, 2020	None	None
January, 2021	None	None
February, 2021	None	None
March, 2021	None	None
April, 2021	None	None
May, 2021	None	None
June, 2021	None	None

McDowell Creek WWTP -- NPDES Permit #NC0036277

MONTH	PERMIT LIMIT VIOLATIONS	REPORTING REQUIREMENT VIOLATIONS
July, 2020	None	None
August, 2020	None	None
September, 2020	None	None
October, 2020	None	None
November, 2020	None	None
December, 2020	None	None
January, 2021	None	None
February, 2021	None	None
March, 2021	None	None
April, 2021	None	None
May, 2021	None	None
June, 2021	None	None

Oxford Glen Plantation WWTP -- NPDES Permit #NC0065384

MONTH	PERMIT LIMIT VIOLATIONS	REPORTING REQUIREMENT VIOLATIONS
July, 2020	None	None
August, 2020	None	None
September, 2020	None	None
October, 2020	None	None
November, 2020	None	None
December, 2020	None	None
January, 2021	None	None
February, 2021	None	None
March, 2021	None	None
April, 2021	None	None
May, 2021	None	None
June, 2021	None	None

Sugar Creek WWTP -- NPDES Permit #NC0024937

MONTH	PERMIT LIMIT VIOLATIONS	REPORTING REQUIREMENT VIOLATIONS
July, 2020	None	None
August, 2020	None	None
September, 2020	None	None
October, 2020	None	None
November, 2020	None	None
December, 2020	None	None
January, 2021	None	None
February, 2021	None	None
March, 2021	None	None
April, 2021	None	None
May, 2021	None	None
June, 2021	None	None