



# Wastewater Performance Report

**July 1, 2015 – June 30, 2016**

**4222 Westmont Drive  
Charlotte, NC 28217**

**Phone: 704-432-4766  
Website: [charlottewater.org](http://charlottewater.org)**

## **I. General Information**

### **Name of Regulated Entity and Responsible Person:**

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

### **Applicable Permits:**

There are five wastewater treatment plants (WWTP) owned and operated by Charlotte Water (CLTWater). 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.

<b>WWTP</b>	<b>NPDES Permit Number</b>	<b>ORC</b>	<b>Phone</b>
Irwin Creek WWTP	NC0024945	Michael Lingerfelt	704-336-2572
Mallard Creek WRF	NC0030210	Darrell DeWitt	704-547-0680
McAlpine Creek WWMF	NC0024970	Sandy Kim Neely	704-542-0736
McDowell Creek WWTP	NC0036277	Joseph Lockler	704-875-6443
Sugar Creek WWTP	NC0024937	William Allen	704-553-2124
Ashe Plantation WWTP	NC0065749	Jeremy Nance	704-634-3389
Oxford Glen WWTP	NC0063584	Jeremy Nance	704-634-3389

In addition to those five 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.

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

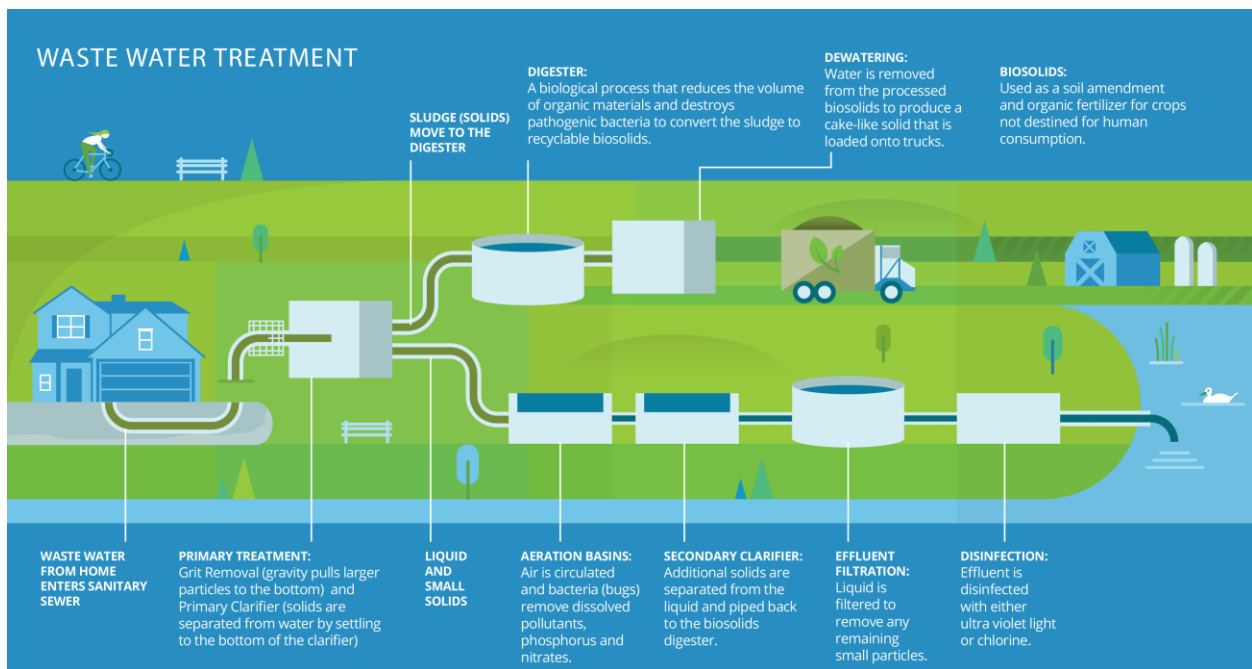
### **Description of collection and treatment systems:**

Charlotte Water (CLTWater) collects wastewater from approximately 246,299 households and businesses throughout the county. Wastewater is collected and directed (via gravity flow supported by sewage lift stations) to one of seven 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

88 million gallons of wastewater is treated and discharged each day from CLTWater plants. CLTWater contributes an average of 3.51 million gallons a day (MGD) to the Rocky River Plant. CLTWater also treats roughly 1.2 million gallons (part of the 88 mgd) from Union County at CLTWater’s McAlpine Creek Plant.

More than 300 of CLTWater’s 846 employees work to maintain 4,244 miles of collection pipelines and 80 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. Disinfection reduces bacterial and pathogenic materials. Finally, the waste stream passes through granular filters to remove very small particles that may not have been removed through the settling process. The treated water is released to the stream.



### 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.

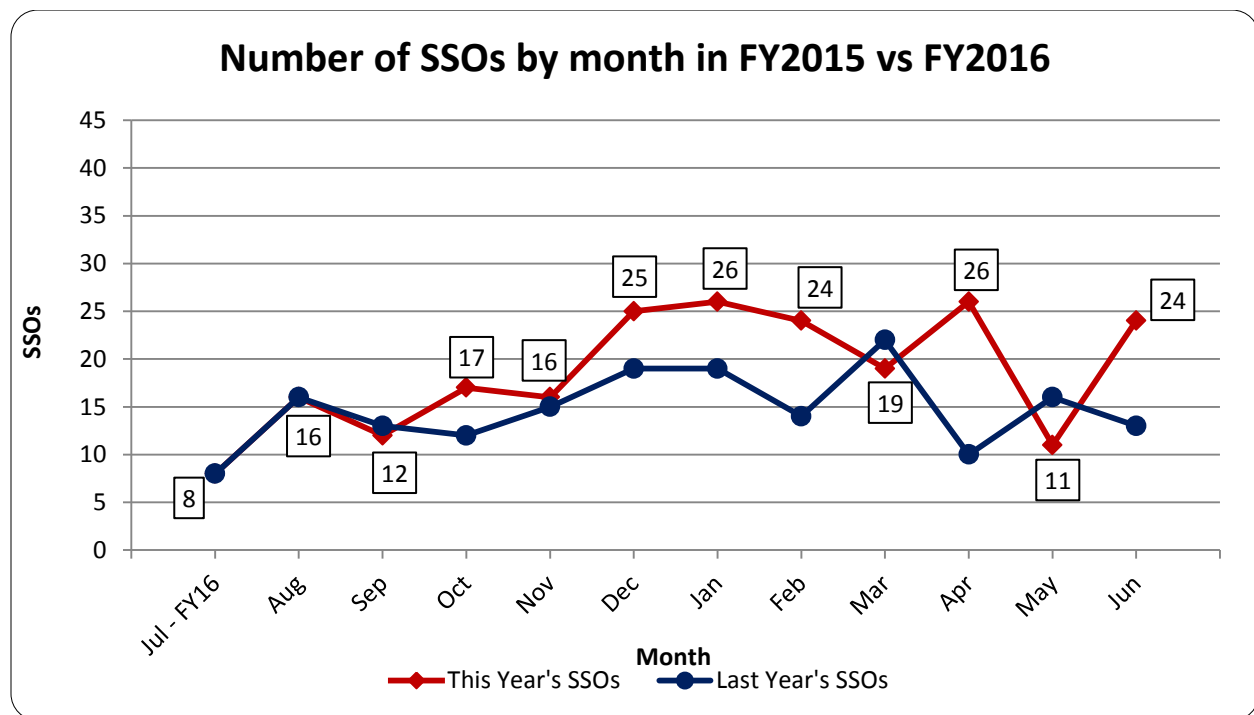
### 5. Disinfection

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

## II. Summary of System Performance

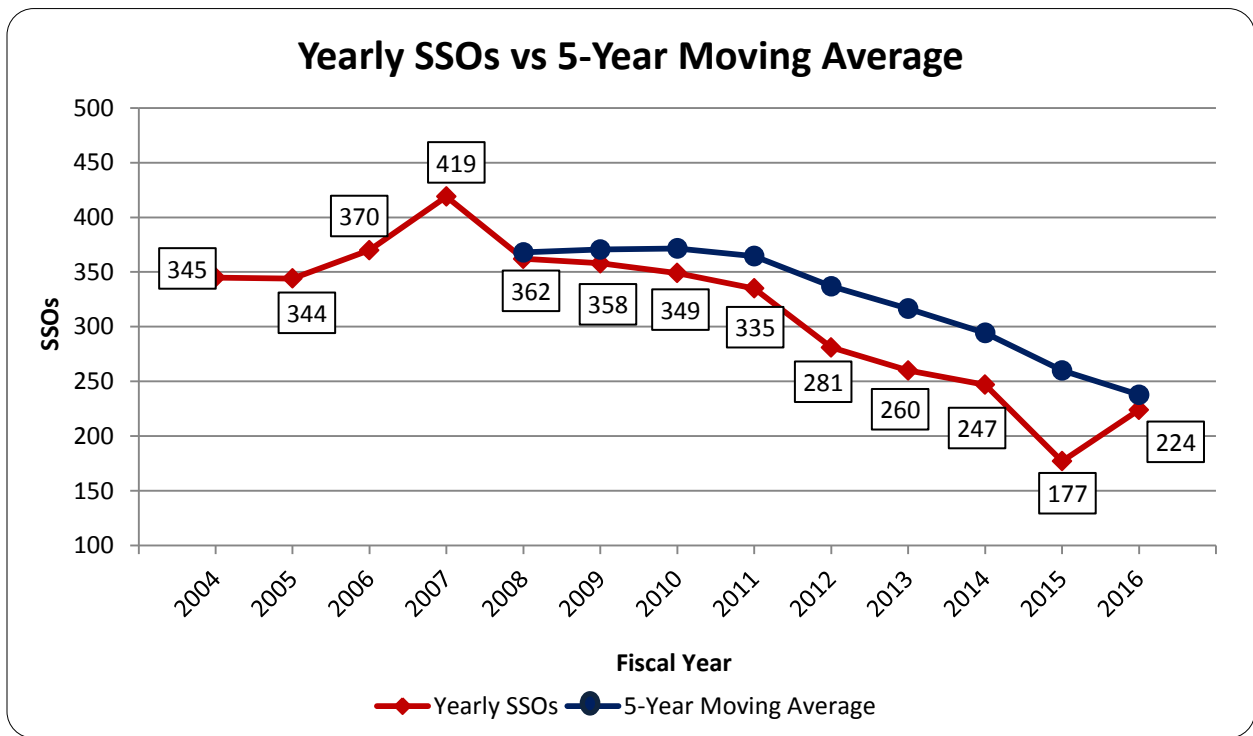
### FY16 Performance

Charlotte Water successfully collected and treated 99.9993 percent of the more than 29.5 billion gallons of wastewater the community produced in the past fiscal year. There were 224 sanitary sewer overflows (SSOs) in our community, an increase of 47 spills compared to the year before. An estimated 207,292 gallons spilled. The number of spills per 100 miles of pipe continued to decline from 10.8 in 2007 to 5.3 spills in fiscal year 2016 as illustrated by the table on page 6. Even though the number of spills increased compared to last year, overall spills continue a long-term trend of decreasing. Charlotte Water continues to evaluate data and is working to maintain a downward trend.



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 311. CLTWater notifies media any time a sanitary sewer overflow results in 1,000 gallons or more reaching surface waters or reach 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 manhole or pipe before reaching proper treatment, including spills less than required reporting thresholds (i.e. less than 1,000 gallons in surface water). Private spills and sewer backups inside homes are not included. The report summarizes spills (both reportable to the State and those escaping the sewer) and other challenges at wastewater treatment plants.



CLTWater employees work 24 hours a day, 365 days per year, to prevent and respond to overflows.

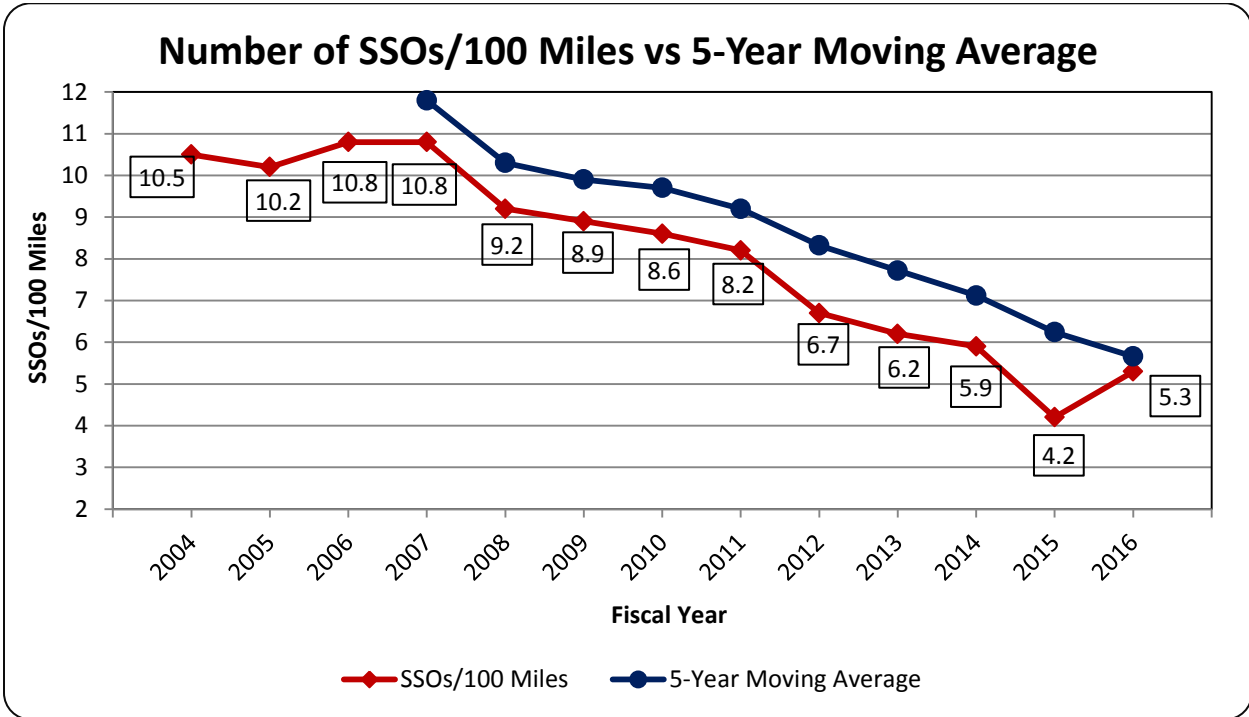
Crews prevent overflows by clearing pipes of tree roots and grease, as well as replacing broken and aging pipes. CLTWater has increased its efforts to educate customers about properly disposing of fats, oils and grease (FOG).

## **Performance Highlights**

CLTWater celebrated some important milestones in FY2016 even as it took numerous actions to prevent overflows and protect water quality through effective wastewater treatment.

- Our wastewater treatment plants met 99.9993 percent of all permitted discharge limits.
- All five major wastewater treatment plants earned Peak Performance Awards from the National Association of Clean Water Agencies (NACWA) for the calendar year ending 2015. 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 third Platinum Award for seven consecutive years of perfect compliance. Sugar Creek Wastewater Treatment Plant, Mallard Creek Water Reclamation Facility, and McDowell Creek Wastewater Treatment Plant earned a Gold Award for zero permit violations in a one year period. Irwin Creek Wastewater Treatment earned the Silver Award for five or fewer violations in a one year period. Over 5,300 compliance tests were conducted during the 2015 calendar year.
- 9.5 miles of wastewater pipe and 183 manholes were rehabilitated, repaired or replaced in fiscal year 2016, which includes a decrease of 1.7 miles of wastewater pipe and an increase of 5 manholes rehabilitated, repaired, or replace in fiscal year 2015.
- 345.6 miles (1,824,948 ft) of wastewater pipe were treated with root control chemicals in fiscal year 2016, an increase of 139.6 miles from fiscal year 2015.
- In fiscal year 2016, 1170.2 miles of wastewater lines were cleaned (including some multiple cleanings in the same location) by CLTWater Field Operations Staff and an additional 107 miles of pipe were cleaned by contractors. There was a total increase of 192.2 miles over fiscal year 2015.
- 228 wastewater service connections were replaced in fiscal year 2016, a decrease of 202 repairs from fiscal year 2015.
- More than 29 miles of rights of way were cleared by contractors to maintain access to off-street sanitary wastewater pipes and to help prevent root intrusions in fiscal year 2016, a decrease of 68.9 miles from fiscal year 2015.
- There are 80 Wastewater Lift Stations serving portions of the CLTWater service area. Staff performed 131 preventive maintenance/electrical tasks for a total of 2575 work hours. This does not include twice weekly station checks, wet well cleaning, emergency generator testing, or emergency/routine repairs. In fiscal year 2016, Charlotte Water built one new station and acquired four stations from private utilities (serving the Chapel Cove, Oxford Glen, Ashe Plantation, Cheval, and Pleasant Valley neighborhoods).
- Charlotte Water added three sewer cleaning crew positions.

- Charlotte Water started work to replace the Steele Creek Pump Station and force main that conveys community wastewater to the nearest wastewater treatment plant in Pineville. This is an investment of \$44 million.



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 2004, the effort was rebranded to Grease Free. In 2016, Charlotte Water rebranded to FlowFree to focus on other overflow contributors now that grease related spills continue to decline.

- City staff inspected grease-handling facilities at 2,579 food service establishments and restaurants (not including follow-up inspections) to ensure proper grease disposal.
- Staff issued 100 Notice of Deficiencies (NOD) of which 75 returned to compliance and 7 are still under investigation.
- In total, 30 grease traps were installed by businesses to fulfill NOD requirements.

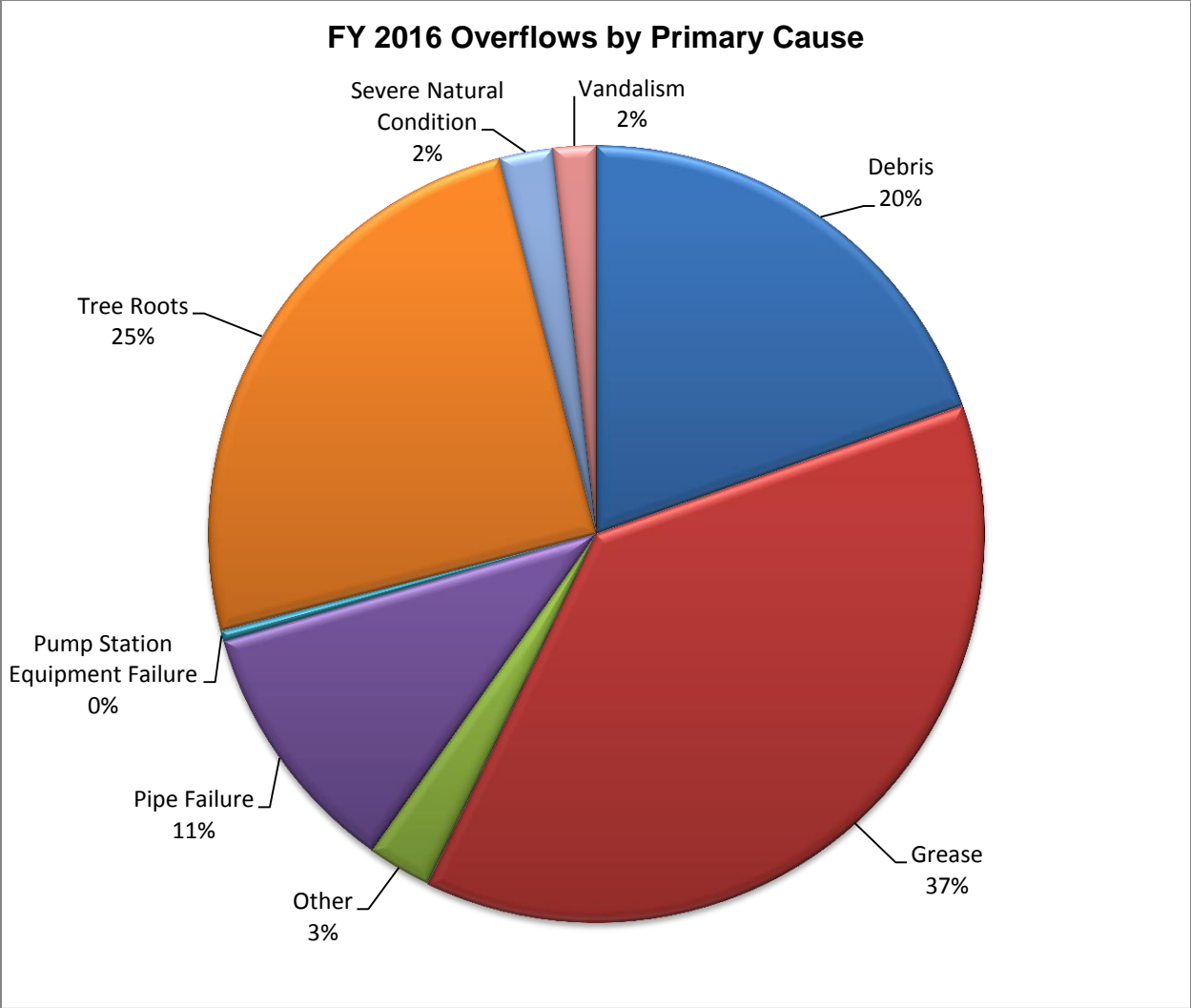
- The City continued its educational program to teach proper disposal of pipe-blocking menaces. Inspectors mailed information to 1,230 customers near spill sites and handed out information to 3,196 customers in apartments / multi-family complexes.
- Staff conducted presentations to more than 2,570 children and adults. Multiple Earth Day events also provided opportunities to distribute FlowFree scrapers, pens and other items.
- CLTWater continues to use door-hangers specifically for maintenance personnel or property managers of apartment or multi-family complexes. This reinforces best management practices for prevention.
- Staff continues to provide bilingual door hangers and promotional items for property managers to give to new residents.

## **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 224 sewer spills that occurred, grease (fats, oils, grease, and other food leftovers) accounted for most of the sanitary sewer overflows. While still the leading cause of overflows, grease was less than 50% for the fourth straight year. Grease has traditionally been the primary cause of 50-60% of spills. Other spill causes included the infiltration of tree roots into pipes, broken pipes, debris, and vandalism. Disposable wipes are also a growing cause of sewer spills.





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. If damaged pipe or other infrastructure is discovered it is repaired. The spilled wastewater can sometimes be captured and pumped back into the sewer system.

CLTWater Rapid Response Crews are quick to respond when notified of a possible spill. Crews responded to more than 89.3 percent of the spills within 60 minutes and more than 96.9 percent of the spills within 120 minutes. The average for all response was 32.9 minutes. The state standard for response is 120 minutes or less. There were seven spills out of 224 where the crew could not respond within 120 minutes.

### ***Wastewater Treatment Plant Challenges***

Charlotte Water's five wastewater treatment plants met 99.9993 percent of all discharge limit tests set forth by our NPDES permits but our commitment is 100 percent compliance. Staff continues to improve maintenance capabilities and overall performance. Major rehabilitation and improvement projects help maintain compliance. Future upgrades and expansions are being added.

There were two (2) incidents where wastewater inside treatment plants did not receive full treatment before reaching a creek. These are typically called a bypass instead of a spill. Both incidents were during the final stage of treatment, ultra-violet disinfection process, and the wastewater was at least partially treated. In each situation, operators quickly found and fixed the problem and notified North Carolina Department of Environmental Resources. After the initial response was complete, staff evaluated potential causes and solutions for each incident. Quick solutions were implemented and more in-depth / extensive solutions are identified as capital needs. No dead fish were found associated with these bypasses. In each case the amount that did not receive full treatment is a small percentage of the daily amount that is treated and safely returned to area creeks.

Charlotte Water purchased private water and wastewater systems from Aqua NC in February 2016. Two package plants, Ashe Plantation and Oxford Glen, were part of that purchased. The NPDES permits are listed on page 1. CLTWater will continue to maintain the wastewater package plants until gravity fed service is available, which may be several years.

CLTWater Environmental Management Division operates the System Protection Section to protect 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 inspects and regulates Commercial Users, such as food service establishments, to keep unsuitable discharges such as fats oils and grease out of the wastewater treatment plants.

While industrial and commercial compliance is extremely high in Charlotte-Mecklenburg, identifying sources of potentially harmful discharges is an ongoing challenge. In fiscal year 2016, the Trunkline Monitoring and FlowFree programs also continued, enabling CLTWater's System Protection and Water Quality staff to closely observe what industrial, institutional, and commercial customers discharge into the wastewater treatment plants, identify potential problem areas, and protect the collection system, wastewater line workers, treatment plants and the environment.

- There were over 250 annual inspections and site visits in the past fiscal year.
- CLTWater honored 40 local companies with Environmental Excellence Awards for FY16 including:
  - Two Crown award recipients for Water Conservation and Industrial Pretreatment,
  - Two Platinum recipients for five consecutive years of Gold level compliance and reporting
  - Twenty-one Gold recipients for 100% compliance with permit limits and reporting, and
  - Seventeen Silver recipients for 90% compliance with permit limits and 100% compliance with reporting
- There were 227 permit limit violations, which resulted in a Notice of Violation, Notice of Non-Compliance, Administrative Order, or similar assessments given to Significant Industrial Users in the past fiscal year.
- Of the 227 mentioned, 26 Civil or Criminal penalties were assessed.

### **Union County Wastewater Treatment Agreement**

Charlotte Water has an interlocal agreement with Union County that began in 2014 to provide contracted operation and maintenance of five Union County wastewater plants. Union County will continue to own the wastewater treatment plants, own and operate the wastewater collection system (separate from the wastewater treatment plants), set rates, and collect user fees for their customers.

### **Illegal Dumping Incident**

In fiscal year 2016, decontamination efforts of the Mallard Creek Wastewater Treatment Plant after the illegal PCB dumping event that occurred February 2014 continued. Charlotte Water staff worked with regulators and peers to design and implement decontamination plans that contribute to an industry standard for these types of treatment plant impacts. Currently Mallard Creek is in the third phase of a four phase process. The decontamination phase project includes training staff, procuring new equipment/parts, financial tracking, and creating project data tracking.

Although this event marked one of the worst contamination events in the utility's history, customers were never impacted mostly due to the staff's quick response during the event and Charlotte Water's strong commitment to protecting the environment.

### **Wastewater Capacity Needs**

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. Recommendations from the study have resulted in the implementation of

extensive reliability improvements projects at the Irwin, Sugar, and McAlpine Wastewater Treatment Plants.

In recent years CLTWater, Mount Holly, and Belmont entered into Memorandums of Understanding to create the partnership needed for a new, regional wastewater plant. CLTWater purchased 180 acres of land at a former Clariant industrial plant site along with the phosphorus and nitrogen discharge permit allocation associated with the industrial plant. The agreements and nutrient allocation purchase will facilitate compliance with the Lake Wylie nutrient TMDL while planning and construction of the regional plant progresses. An Environmental Impact Statement was completed with N.C. DEQ in March 2015. CLTWater submitted the NPDES permit application for the new regional facility, which will treat about 12 mgd with a possible expansion to 25 mgd at a future date if necessary.

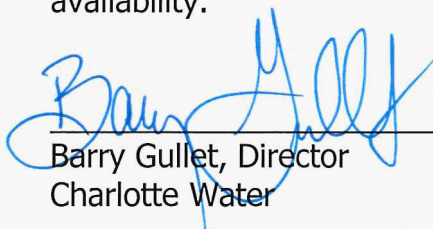
### **III. Notification**

Sanitary sewer overflow and wastewater treatment plant details are included in Sections IIA and IIB.

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.

  
\_\_\_\_\_  
Barry Gullet, Director  
Charlotte Water

8-23-2016  
\_\_\_\_\_  
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, 2015 and June 30, 2016.

Date	Volume (Gallons)	Volume to Surface Water	Surface Water Name	Fish Kill?	Address	Primary Cause
7/6/15	535	535	Stewart Creek	No	3439 Mable Hubbard Dr	Debris In Line
7/7/15	178	178	Briar Creek	No	3023 Central Av	Grease
7/9/15	485	485	McAlpine Creek	No	10644 Moss Mill Ln	Roots
7/20/15	303	303	Little Sugar Creek	No	914 White Plains Rd	Grease
7/20/15	960	960	Briar Creek	No	818 Villa Ct	Grease
7/24/15	585	0	Little Sugar Creek	No	916 N Alexander St	Grease
7/25/15	310	310	Briar Creek	No	2204 Olde Chantilly Ct	Pipe Failure
7/28/15	20	0	Mountain Island Lake	No	2819 Olympus Dr	Pipe Failure
8/3/15	840	840	Kings Branch	No	801 E Arrowood Rd	Grease
8/3/15	216	216	Briar Creek	Yes	3325 Donovan Pl	Grease
8/4/15	720	0	McMullen Creek	No	516 Nottingham Dr	Roots
8/8/15	1100	1100	Campbell Creek	No	7621 Campbell Creek Ln	Grease
8/11/15	395	300	Mallard Creek	No	9848 N Tryon St	Other
8/13/15	58	0	McMullen Creek	No	4632 Sharon View Rd	Roots
8/14/15	140	0	Sugar Creek	No	436 Cone Av	Grease
8/16/15	5305	5305	Toby Creek	No	3115 Old Ironside Dr	Roots
8/18/15	99	99	McAlpine Creek	No	5047 Sharon Woods Ln	Pipe Failure
8/21/15	158	158	Long Creek	No	10600 Spruce Mountain Rd	Roots
8/24/15	106	53	Mallard Creek	No	10747 Derryrush Dr	Grease
8/24/15	54	0	Briar Creek	No	2226 Chesterfield Av	Debris In Line
8/27/15	188	0	Irwin Creek	No	2401 Derita Av	Roots

<b>Date</b>	<b>Volume (Gallons)</b>	<b>Volume to Surface Water</b>	<b>Surface Water Name</b>	<b>Fish Kill?</b>	<b>Address</b>	<b>Primary Cause</b>
8/31/15	1980	1980	Little Sugar Creek	No	6220 Park Rd	Roots
8/31/15	940	900	Mallard Creek	No	11855 N Tryon St	Debris In Line
9/1/15	2130	1605	Toby Creek	No	552 Blue Rock Dr	Roots
9/3/15	42	0	Campbell Creek	No	6345 Lakefill Rd	Grease
9/6/15	1060	1060	Four Mile Creek	No	7617 British Gardens Ln	Grease
9/8/15	160	0	McAlpine Creek	No	7716 Ritter Dr	Roots
9/8/15	2150	2150	Little Sugar Creek	No	2836 Huntingtowne Farms Ln	Grease
9/17/15	318	0	Little Sugar Creek	No	710 E 12th St	Grease
9/17/15	825	825	Paw Creek	No	2203 Lisa Carole Dr	Grease
9/19/15	71	71	Four Mile Creek	No	10700 Ballantyne Commons Py	Roots
9/20/15	1245	623	Reedy Creek	No	8217 Mccarron Wy	Grease
9/22/15	378	378	Briar Creek	No	4200 Chelmsford Rd	Grease
9/23/15	22.5	22.5	McAlpine Creek	No	539 Mammoth Oaks Dr	Grease
9/26/15	140	140	Irwin Creek	No	201 N Tryon St	Debris In Line
10/1/15	75	0	Little Sugar Creek	No	2532 Tattersall Dr	Roots
10/2/15	576	576	Ticer Branch	No	2640 Little Rock Rd	Grease
10/5/15	28	28	McAlpine Creek	No	7612 Ballantyne Commons Py	Debris In Line
10/6/15	850	850	Mc Mullen Creek	No	10132 Standing Stone Ct	Grease
10/7/15	48	0	Irwin Creek	No	3200 Dalecrest Dr	Debris In Line
10/12/15	2700	2700	McAlpine Creek	No	2900 Vestal Pl	Pipe Failure
10/12/15	348	348	McMullen Creek	No	9923 Deer Brook Ln	Grease
10/15/15	3750	3750	Neal Branch	No	12420 Means Ct	Debris In Line
10/16/15	19.5	19.5	McMullen Creek	No	2750 Loch Ln	Debris In Line
10/17/15	250	250	Irwin Creek	No	3134 Ridge Av	Grease
10/19/15	2025	2025	Neal Branch	No	12420 Means Ct	Debris In Line
10/21/15	3660	3660	Catawba River	No	1104 Ballina Wy	Debris In Line
10/25/15	1335	1335	Ticer Branch	No	6949 Calton Ln	Grease

<b>Date</b>	<b>Volume (Gallons)</b>	<b>Volume to Surface Water</b>	<b>Surface Water Name</b>	<b>Fish Kill?</b>	<b>Address</b>	<b>Primary Cause</b>
10/27/15	390	390	Campbell Creek	No	5720 Running Wood Ln	Debris In Line
10/30/15	1200	1200	Reedy Creek	No	6314 Linda Lake Ct	Roots
10/30/15	2040	2040	Campbell Creek	No	6116 Vernedale Rd	Debris In Line
11/2/15	1800	900	McDowell Creek	No	209 Hillcrest Dr	Roots
11/3/15	10	0	McAlpine Creek	No	1823 Carmel Ridge Rd	Grease
11/3/15	4500	4500	McIntyre Creek	No	2734 Clarencefield Dr	Vandalism
11/7/15	720	600	Toby Creek	No	300 Hampton Church Rd	Debris In Line
11/7/15	1041	1041	Walker Branch	No	10148 Orchard Grass Ct	Grease
11/8/15	216	216	Briar Creek	No	3828 Fellsway Rd	Grease
11/9/15	560	560	Briar Creek	No	2135 Brookwood Rd	Roots
11/10/15	3	0	Mountain Island Lake	No	1549 Mt Isle Harbor Dr	Pipe Failure
11/11/15	100	100	Clarke Creek	No	8854 Arbor Creek Dr	Roots
11/13/15	120	60	Little Sugar Creek	No	2420 N Brevard St	Debris In Line
11/14/15	195	195	McAlpine Creek	No	3830 River Ridge Rd	Grease
11/16/15	182	182	McAlpine Creek	No	2412 Mirow Pl	Debris In Line
11/16/15	660	660	McMullen Creek	No	2442 Cloister Dr	Debris In Line
11/17/15	400	400	Dixon Branch	No	12202 Hambright Rd	Debris In Line
11/24/15	310	310	McMullen Creek	No	10120 Johnston Rd	Grease
11/29/15	660	660	Mallard Creek	No	3644 Hatwynn Rd	Debris In Line
12/1/15	375	300	Briar Creek	No	2732 Temple Ln	Grease
12/2/15	400	400	Sugar Creek	No	8717 Windsong Dr	Grease
12/3/15	48	0	Steele Creek	No	10830 Morgan Creek Dr	Grease
12/6/15	60	30	McMullen Creek	No	3417 Chevington Rd	Grease
12/8/15	117	0	McDowell Creek	No	9121 Park Grove St	Debris In Line
12/9/15	680	340	McDowell Creek	No	16500 Holly Crest Ln	Grease
12/10/15	800	400	Rocky River	No	400 Avinger Ln	Grease

<b>Date</b>	<b>Volume (Gallons)</b>	<b>Volume to Surface Water</b>	<b>Surface Water Name</b>	<b>Fish Kill?</b>	<b>Address</b>	<b>Primary Cause</b>
12/13/15	295	295	Irvin's Creek	No	2709 Mill Valley Ct	Grease
12/14/15	183	0	Briar Creek	No	6714 Markway Dr	Grease
12/15/15	305	0	Lake Norman	No	19900 Shearwater Point Dr	Pipe Failure
12/16/15	3300	2640	Stowe Branch	No	5409 Stowe Derby Dr	Pipe Failure
12/17/15	120	0	McDowell Creek	No	19115 Spring Blossom Ln	Roots
12/21/15	1140	570	Taggart Creek	No	4503 Ashley Cr	Grease
12/22/15	90	0	Little Sugar Creek	No	4315 Simsbury Rd	Grease
12/22/15	2100	2100	McAlpine Creek	No	5930 Carmel Station Av	Other
12/23/15	1800	1800	Little Hope Creek	No	1019 Montford Dr	Severe Natural Condition
12/23/15	118	0	Long Creek	No	224 Sturbridge Dr	Debris In Line
12/26/15	444	444	Sugar Creek	No	321 Stone Post Rd	Grease
12/26/15	496	496	McIntyre Creek	No	6370 Day Lilly Ln	Grease
12/26/15	200	200	Campbell Creek	No	4782 Old Lantern Wy	Grease
12/29/15	100	0	McIntyre Creek	No	9300 Feldbank Dr	Severe Natural Condition
12/30/15	1200	1200	Irwin Creek	No	3449 Reid Av	Severe Natural Condition
12/30/15	750	750	McDowell Creek	No	8936 Pristine Ct	Severe Natural Condition
12/30/15	540	540	Little Hope Creek	No	1026 Montford Dr	Severe Natural Condition
1/1/16	12560	12560	Mallard Creek	No	9225 Emerald Cove Dr	Pipe Failure
1/4/16	2870	0	Clark Creek	No	13645 Hunt Valley Dr	Other
1/5/16	118	0	Briar Creek	No	3445 Windsor Dr	Roots
1/5/16	560	560	McMullen Creek	No	3726 School House Ln	Pipe Failure
1/6/16	57	0	Taggart Creek	No	2848 Willow St	Grease
1/7/16	63	0	McAlpine Creek	No	7001 Golden Spike Dr	Roots



<b>Date</b>	<b>Volume (Gallons)</b>	<b>Volume to Surface Water</b>	<b>Surface Water Name</b>	<b>Fish Kill?</b>	<b>Address</b>	<b>Primary Cause</b>
1/9/16	30	0	Coffee Creek	No	7926 Forest Point Bv	Debris In Line
1/11/16	144	144	Paw Creek	No	5535 Carlingford Ct	Grease
1/12/16	610	610	Little Sugar Creek	No	700 E 8th St	Grease
1/14/16	48	24	Mallard Creek	No	7501 Hubbard Woods Rd	Grease
1/16/16	540	540	McAlpine Creek	No	7126 Skipton Ln	Roots
1/20/16	700	350	Briar Creek	No	4539 Perth Ct	Vandalism
1/21/16	88	0	Mountain Island Lake	No	11424 Foggy Bank Ln	Pipe Failure
1/21/16	36000	36000	Clems Branch	No	15823 Sullivan Ridge Dr	Pipe Failure
1/25/16	29	0	Little Sugar Creek	No	7045 Quail Hill Rd	Grease
1/26/16	81	0	Davidson Lake	No	737 Peninsula Dr. Davidson	Grease
1/26/16	1030	1030	Torrence Creek	No	13801 Reese Bv E	Debris In Line
1/26/16	1340	1340	Irwin Creek	No	3125 Bank St	Grease
1/26/16	2700	2700	Clarke Creek	No	8932 Arbor Creek Dr	Vandalism
1/26/16	105	52	Lake Norman	No	18029 Whispering Oaks	Pipe Failure
1/27/16	330	330	Stewart Creek	No	3425 Rogers St	Roots
1/30/16	400	400	Gum Branch	No	416 Gum Branch Rd	Debris In Line
1/30/16	450	0	Davidson Lake	No	145 Parkview St.	Grease
1/31/16	4625	4625	Irwin Creek	No	1225 Remount Rd	Debris In Line
1/31/16	157	78.5	Toby Creek	No	1032 Autumnwood Ln	Roots
2/1/16	135	135	Little Hope Creek	No	4142 Conway Av	Grease
2/5/16	50	50	McAlpine Creek	No	8313 Rust Wood Pl	Grease
2/6/16	65	0	McAlpine Creek	No	4735 Carmel Rd	Pipe Failure
2/8/16	112	0	Irwin Creek	No	2445 Julia Av	Grease
2/11/16	435	0	Toby Creek	No	9416 Sandburg Av	Grease
2/11/16	167	0	Little Sugar Creek	No	916 N Alexander St	Debris In Line
2/12/16	270	270	Steele Creek	No	10124 Westlake Dr	Debris In Line
2/12/16	310	310	McAlpine Creek	No	2820 Rea Rd	Roots

<b>Date</b>	<b>Volume (Gallons)</b>	<b>Volume to Surface Water</b>	<b>Surface Water Name</b>	<b>Fish Kill?</b>	<b>Address</b>	<b>Primary Cause</b>
2/16/16	175	100	Lake Norman	No	21318 Norman Shores Dr	Pipe Failure
2/17/16	2360	2000	Stewart Creek	No	4826 Worth Pl	Grease
2/18/16	440	440	Mallard Creek	No	5323 Dewmorn Pl	Roots
2/18/16	410	410	Taggart Creek	No	4615 Morris Field Dr	Roots
2/21/16	1155	866	Campbell Creek	No	4608 Gaynelle Dr	Debris In Line
2/21/16	72	0	Paw Creek	No	1212 Eagles Landing Dr	Roots
2/22/16	176	0	Paw Creek	No	2701 Kendrick Dr	Roots
2/22/16	202	100	Lake Norman	No	18948 Casual Cay Ln	Other
2/23/16	267	0	Sugar Creek	No	1750 Shopton Rd	Roots
2/23/16	978	0	Clarks Creek	No	12215 Dearmon Rd	Other
2/25/16	112	0	Mallard Creek	No	7407 Balancing Rock Ct	Debris In Line
2/26/15	125	0	Stewart Creek	No	1514 Duckworth Av	Pipe Failure
2/27/16	100	100	McAlpine Creek	No	9112 Vicksburg Rd	Roots
2/27/16	160	160	Paw Creek	No	1301 Ranch Rd	Grease
2/28/16	366	0	McAlpine Creek	No	4925 Dawnridge Dr	Roots
3/1/16	375	375	McMullen Creek	No	9000 Warbler Ct	Grease
3/1/16	165	165	Irwin Creek	No	3430 St Vardell Ln	Debris In Line
3/6/16	20	0	Lake Wyle	No	9827 Withers Rd	Pipe Failure
3/8/16	1400	700	McAlpine Creek	No	9915 Bella Marche Dr	Roots
3/10/16	220	220	McAlpine Creek	No	226 Oak Creek Dr	Grease
3/11/16	175	175	Little Sugar Creek	No	6210 Monteith Dr	Grease
3/11/16	94	0	Irvins Creek	No	10044 Markus Dr	Debris In Line
3/14/16	330	300	Clarks Creek	No	12300 Dearmon Rd	Roots
3/14/16	330	300	Briar Creek	No	4725 Belle Plaine Dr	Grease
3/15/16	37	0	Little Sugar Creek	No	7117 Bridlespur Ln	Debris In Line
3/17/16	925	230	Briar Creek	No	2525 Forest Dr	Roots

<b>Date</b>	<b>Volume (Gallons)</b>	<b>Volume to Surface Water</b>	<b>Surface Water Name</b>	<b>Fish Kill?</b>	<b>Address</b>	<b>Primary Cause</b>
3/22/16	129	0	Briar Creek	No	5825 Old Concord Rd	Debris In Line
3/22/16	1325	1325	Irwin Creek	No	3123 Bank St	Debris In Line
3/24/16	2940	1470	Sugar Creek	No	11515 Granite St	Pipe Failure
3/29/16	140	140	Sugar Creek	No	9129 Southern Pine Bv	Roots
3/29/16	650	650	Four Mile Creek	No	3136 Shallowood Ln	Grease
3/30/16	296	0	Little Sugar Creek	No	8740 Sharonbrook Dr	Roots
3/31/16	500	460	Mallard Creek	No	8600 University City Bv	Grease
4/1/16	343	343	McAlpine Creek	No	15719 John J Delaney Dr	Debris In Line
4/3/16	425	400	Four Mile Creek	No	4300 Piper Glen Dr	Grease
4/6/16	30.5	0	Stevens Creek	No	13334 Castleford Dr	Pipe Failure
4/6/16	1160	1160	McMullen Creek	No	1000 Lomax Av	Grease
4/7/16	1000	1000	Doby Creek	No	225 Clark Bv	Debris In Line
4/8/16	1035	0	Little Sugar Creek	No	10312 Avondale Av	Debris In Line
4/10/16	249	249	Clarke Creek	No	4501 Rock Stream Dr	Grease
4/11/16	2630	2630	Briar Creek	No	3800 Country Club Dr	Pipe Failure
4/12/16	76	76	Paw Creek	No	6716 Manderly Dr	Roots
4/12/16	345	345	McMullen Creek	No	2432 Cloister Dr	Grease
4/13/16	94	94	Mallard Creek	No	1028 Morning Glory Dr	Debris In Line
4/13/16	900	900	Briar Creek	No	525 Johnson Rd	Roots
4/15/16	28	0	Stewart Creek	No	2824 Sparta Av	Debris In Line
4/15/16	513	513	Clark Creek	No	501 Huntersville-Concord Rd	Roots
4/16/16	1670	1670	Four Mile Creek	No	3136 Shallowood Ln	Roots
4/16/16	200	200	McMullen Creek	No	6909 Riesman Ln	Grease
4/16/16	450	0	Torrence Creek	No	9340 Old Barnette Pl	Grease
4/16/16	48	0	Stewart Creek	No	3814 Brookshire Bv	Grease
4/16/16	65	0	Reedy Creek	No	4134 Fincastle Ct	Roots
4/16/16	195	0	McAlpine Creek	No	5142 Red Cedar Ln	Grease
4/22/16	870	0	Sugar Creek	No	2405 Cascade Pointe Bv	Debris In Line

<b>Date</b>	<b>Volume (Gallons)</b>	<b>Volume to Surface Water</b>	<b>Surface Water Name</b>	<b>Fish Kill?</b>	<b>Address</b>	<b>Primary Cause</b>
4/23/16	1620	1620	Briar Creek	No	1001 Palmer Plaza Ln	Debris In Line
4/27/16	1570	1570	Four Mile Creek	No	6106 Cherry Tree Ln	Pipe Failure
4/28/16	585	293	Four Mile Creek	No	6017 Lake Providence Ln	Debris In Line
4/28/16	300	300	McMullen Creek	No	3031 Providence Rd	Grease
5/2/16	300	0	Taggart Creek	No	2405 Cascade Pointe Bv	Debris In Line
5/4/16	510	510	Briar Creek	No	2519 Forest Dr	Roots
5/9/16	1110	1110	Paw Creek	No	1604 Little Rock Rd	Grease
5/9/16	920	920	Irwin Creek	No	1500 Prairie Valley Dr	Grease
5/11/16	405	405	McAlpine Creek	No	1346 Fox Run Dr	Roots
5/11/16	660	660	Campbell Creek	No	8012 Briardale Dr	Roots
5/16/16	145	0	Kings Branch	No	400 E Arrowood Rd	Debris In Line
5/22/16	1390	700	Briar Creek	No	2801 Temple Ln	Grease
5/23/16	38	0	Reedy Creek	No	8117 Saddlehorse Ln	Grease
5/25/16	30	0	Lake Wylie	No	6220 River Cabin Ln	Pipe Failure
5/26/16	109	109	McAlpine Creek	No	1825 Lawton Bluff Rd	Roots
6/1/16	3110	3110	Irwin Creek	No	900 W 12th St	Pipe Failure
6/2/16	180	180	McAlpine Creek	No	412 Sardis Ln	Grease
6/7/16	118	118	McAlpine Creek	No	4800 Parview Dr North	Roots
6/9/16	192	0	McMullen Creek	No	1500 N Sharon Amity Rd	Grease
6/9/16	455	0	Irvins Creek	No	2526 Annecy Dr	Roots
6/13/16	108	54	Sugar Creek	No	4216 Graham St	Roots
6/14/16	3420	1710	Gum Branch	No	6415 Old Plank Rd	Roots
6/14/16	1185	1185	Ticer Branch	No	3514 Barry Dr	Roots
6/15/16	1022	1022	Little Hope Creek	No	4848 Gilmore Dr	Pipe Failure
6/16/16	34	0	Rocky River	No	206 Jackson St	Grease
6/16/16	48.5	0	Sugar Creek	No	4101 Meadow Oak Dr	Pipe Failure
6/16/16	405	405	McMullen Creek	No	5413 Gwynne Av	Other

<b>Date</b>	<b>Volume (Gallons)</b>	<b>Volume to Surface Water</b>	<b>Surface Water Name</b>	<b>Fish Kill?</b>	<b>Address</b>	<b>Primary Cause</b>
6/21/16	220	220	Taggart Creek	No	5712 Leake St	Grease
6/25/16	147	110	McAlpine Creek	No	7436 Leharne Dr	Roots
6/26/16	1165	1165	Irwin Creek	No	1408 Oaklawn Av	Pipe Failure
6/27/16	3670	1835	McAlpine Creek	No	7498 Bevington Pl	Grease
6/27/16	800	600	Clems Branch	No	26251 Camden Woods Dr	Pump Station Equipment Failure
6/28/16	116	0	Reedy Creek	No	8018 Count Fleet Ln	Grease
6/28/16	144	144	Edwards Branch	No	1333 Tarrington Av	Grease
6/28/16	1780	1780	Little Sugar Creek	Yes	2001 Wensley Dr	Roots
6/29/16	124	0	Six Mile Creek	No	8606 Walsham Dr	Debris In Line
6/29/16	160	160	Taggart Creek	No	4001 Carlyle Dr	Vandalism
6/29/16	3520	3520	Little Sugar Creek	No	2800 Huntingtowne Farms Ln	Roots

**TOTAL NUMBER OF FY2016 COLLECTION SYSTEM SPILLS: 224**

Volume Safely Collected, Treated & Discharged During Fiscal Year 2016:  
 Volume Spilled:

30,512,000,000 Gallons  
 207,292 Gallons

**PERCENTAGE OF WASTEWATER SAFELY COLLECTED, TREATED AND RELEASED DURING**

FY16: more than 99.9993%  
 FY15: more than 99.9993%  
 FY14: more than 99.9981%  
 FY13: more than 99.9992%  
 FY12: more than 99.9977%  
 FY11: more than 99.9986%  
 FY10: more than 99.9973%  
 FY09: more than 99.9987%

**VI. Permit Compliance and Reporting Violations, by plant**

**Irwin Creek WWTP -- NPDES Permit #NC0024945**

<b>MONTH</b>	<b>PERMIT LIMIT VIOLATIONS</b>	<b>REPORTING REQUIREMENT VIOLATIONS</b>
July, 2015	toxicity failure	NA
August, 2015	NA	NA
September, 2015	NA	NA
October, 2015	NA	NA
November, 2015	NA	NA
December, 2015	NA	NA
January, 2016	toxicity failure	NA
February, 2016	NA	NA
March, 2016	toxicity failure	NA
April, 2016	NA	NA
May, 2016	NA	NA
June, 2016	NA	NA

**Mallard Creek WRF -- NPDES Permit #NC0030210**

<b>MONTH</b>	<b>PERMIT LIMIT VIOLATIONS</b>	<b>REPORTING REQUIREMENT VIOLATIONS</b>
July, 2015	NA	NA
August, 2015	NA	NA
September, 2015	NA	NA
October, 2015	NA	NA
November, 2015	NA	NA
December, 2015	NA	NA
January, 2016	NA	NA
February, 2016	toxicity failure	NA
March, 2016	NA	NA
April, 2016	NA	NA
May, 2016	NA	NA
June, 2016	NA	NA

**McAlpine Creek WWTF -- NPDES Permit #NC0024970**

<b>MONTH</b>	<b>PERMIT LIMIT VIOLATIONS</b>	<b>REPORTING REQUIREMENT VIOLATIONS</b>
July, 2015	NA	NA
August, 2015	NA	NA
September, 2015	NA	NA
October, 2015	NA	NA
November, 2015	NA	NA
December, 2015	NA	NA
January, 2016	NA	NA
February, 2016	NA	NA
March, 2016	NA	NA
April, 2016	NA	NA
May, 2016	NA	NA
June, 2016	NA	NA

**McDowell Creek WWTP -- NPDES Permit #NC0036277**

<b>MONTH</b>	<b>PERMIT LIMIT VIOLATIONS</b>	<b>REPORTING REQUIREMENT VIOLATIONS</b>
July, 2015	NA	NA
August, 2015	NA	NA
September, 2015	NA	NA
October, 2015	NA	NA
November, 2015	NA	NA
December, 2015	NA	NA
January, 2016	NA	NA
February, 2016	NA	NA
March, 2016	NA	NA
April, 2016	NA	NA
May, 2016	NA	NA
June, 2016	NA	NA

**Sugar Creek WWTP -- NPDES Permit #NC0024937**

<b>MONTH</b>	<b>PERMIT LIMIT VIOLATIONS</b>	<b>REPORTING REQUIREMENT VIOLATIONS</b>
July, 2015	NA	NA
August, 2015	NA	NA
September, 2015	NA	NA
October, 2015	NA	NA
November, 2015	NA	NA
December, 2015	NA	NA
January, 2016	NA	NA
February, 2016	NA	NA
March, 2016	NA	NA
April, 2016	NA	NA
May, 2016	NA	NA
June, 2016	NA	NA



**Ashe Plantation WWTP -- NPDES Permit #NC0065749**

<b>MONTH</b>	<b>PERMIT LIMIT VIOLATIONS</b>	<b>REPORTING REQUIREMENT VIOLATIONS</b>
February, 2016	NA	NA
March, 2016	NA	NA
April, 2016	NA	NA
May, 2016	NA	NA
June, 2016	NA	NA

**Oxford Glen Plantation WWTP -- NPDES Permit #NC0065384**

<b>MONTH</b>	<b>PERMIT LIMIT VIOLATIONS</b>	<b>REPORTING REQUIREMENT VIOLATIONS</b>
February, 2016	NA	NA
March, 2016	NA	NA
April, 2016	NA	NA
May, 2016	NA	NA
June, 2016	NA	NA