



# Wastewater Performance Report

**July 1, 2014 – June 30, 2015**

4222 Westmont Drive  
Charlotte, NC 28217

Phone: 704-336-4407  
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 facilities (WWTF) 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>WWTF</b>         | <b>NPDES Permit Number</b> | <b>ORC</b>         | <b>Phone</b> |
|---------------------|----------------------------|--------------------|--------------|
| Irwin Creek WWTP    | NC0024945                  | Michael Lingerfelt | 704-357-1344 |
| Mallard Creek WRF   | NC0030210                  | Darrell DeWitt     | 704-547-0680 |
| McAlpine Creek WWMF | NC0024970                  | Sandy Kim Neely    | 704-634-3512 |
| McDowell Creek WWTP | NC0036277                  | Joseph Lockler     | 704-875-6443 |
| Sugar Creek WWTP    | NC0024937                  | William Allen      | 704-553-2124 |

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 |

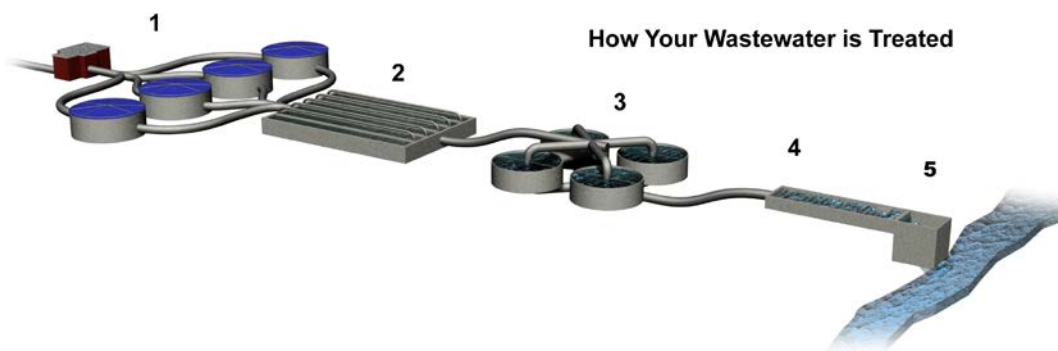
### **Description of collection and treatment systems:**

Charlotte Water (CLTWater) collects wastewater from approximately 247,165 households and businesses throughout the county. Wastewater is collected and directed (via gravity flow supported by sewage lift stations) to one of five 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 80.6 million gallons of wastewater is treated and discharged each day from CLTWater plants. CLTWater contributes an average of 3.823 million gallons a day (MGD) to the Rocky

River Plant. CLTWater also treats roughly 2.331 million gallons (part of the 80.6 mgd) from Union County at CLTWater's McAlpine Creek Plant.

More than 200 of CLTWater's 802.5 employees work to maintain 4,204 miles of collection pipelines and 77 sewage lift stations throughout the county. The gravity sewer 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**

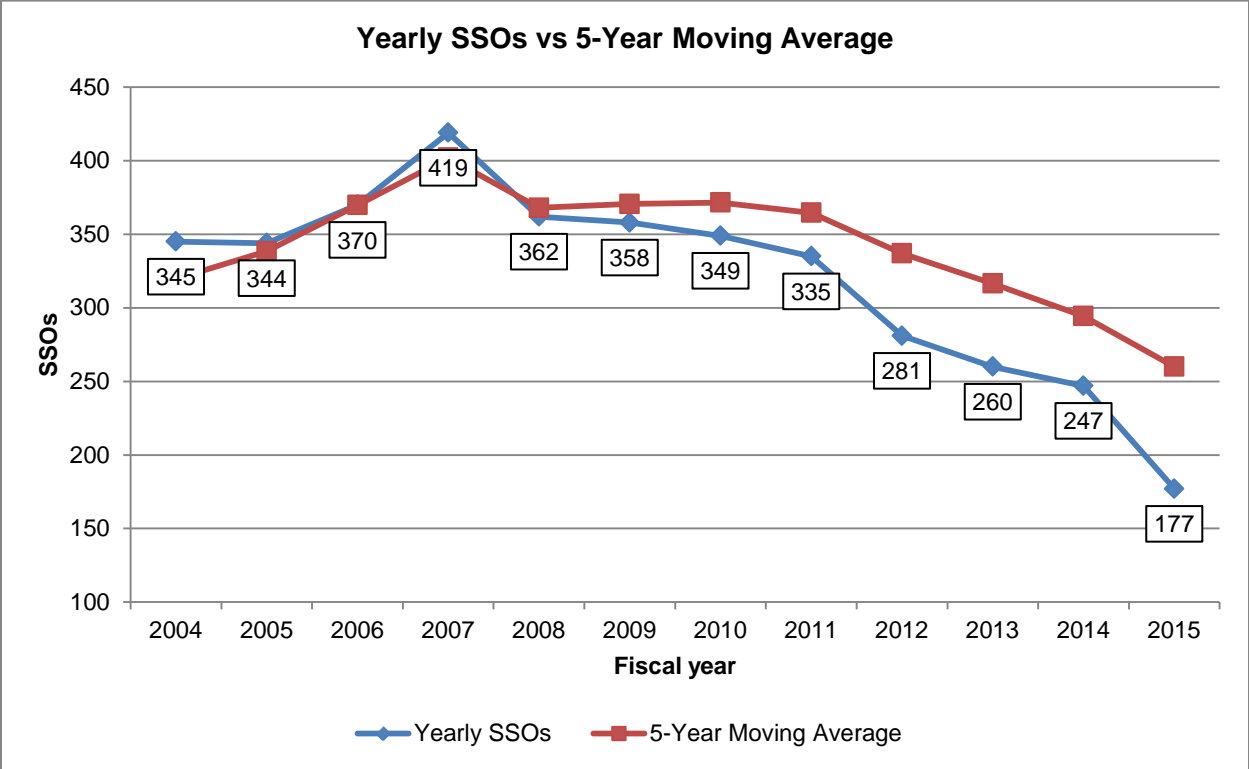
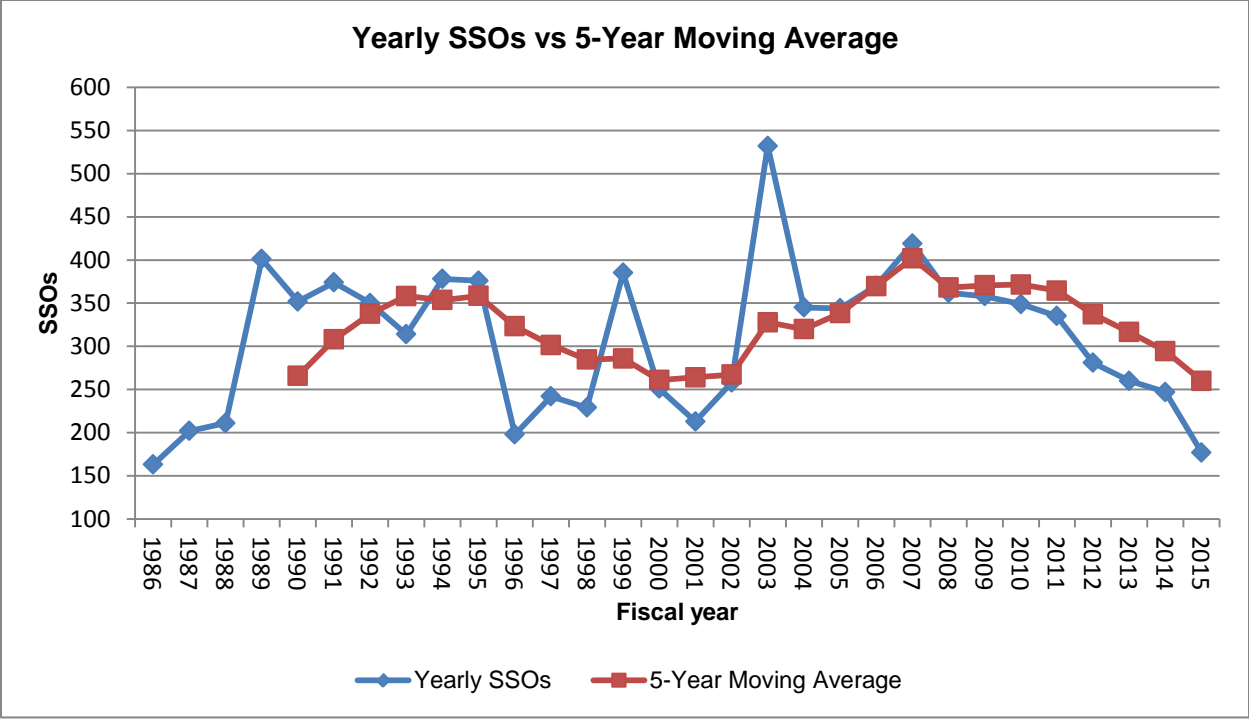
Water is disinfected to remove any remaining pathogens, and then the treated water is released into creeks.

## **II. Summary of System Performance**

### **How did we do?**

We successfully collected and treated 99.9993 percent of the more than 29.3 billion gallons of wastewater the community produced in the past fiscal year. There were 177 sanitary sewer overflows (SSOs) in our community, a decrease of 70 spills compared to the year before. This is the lowest number of spills since 1986 (163), even though our miles of pipe have increased substantially since that time. In fact, the number of spills per 100 miles of pipe continued to decline from 10.8 in 2007 to 4.2 spills in fiscal year 2015 as illustrated by the table on page 4. An estimated 200,352 gallons spilled.

Inspection crews and our customers find overflows. Any time a sanitary sewer overflow has 1,000 gallons or more reach surface waters or reach recreational waters CLTWater notifies media. A legal notice is posted when overflows of 15,000 gallons or more reach surface waters. Crews also use door hangers to notify customers when appropriate. 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 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 even as it took numerous actions to prevent overflows and protect water quality through effective wastewater treatment.

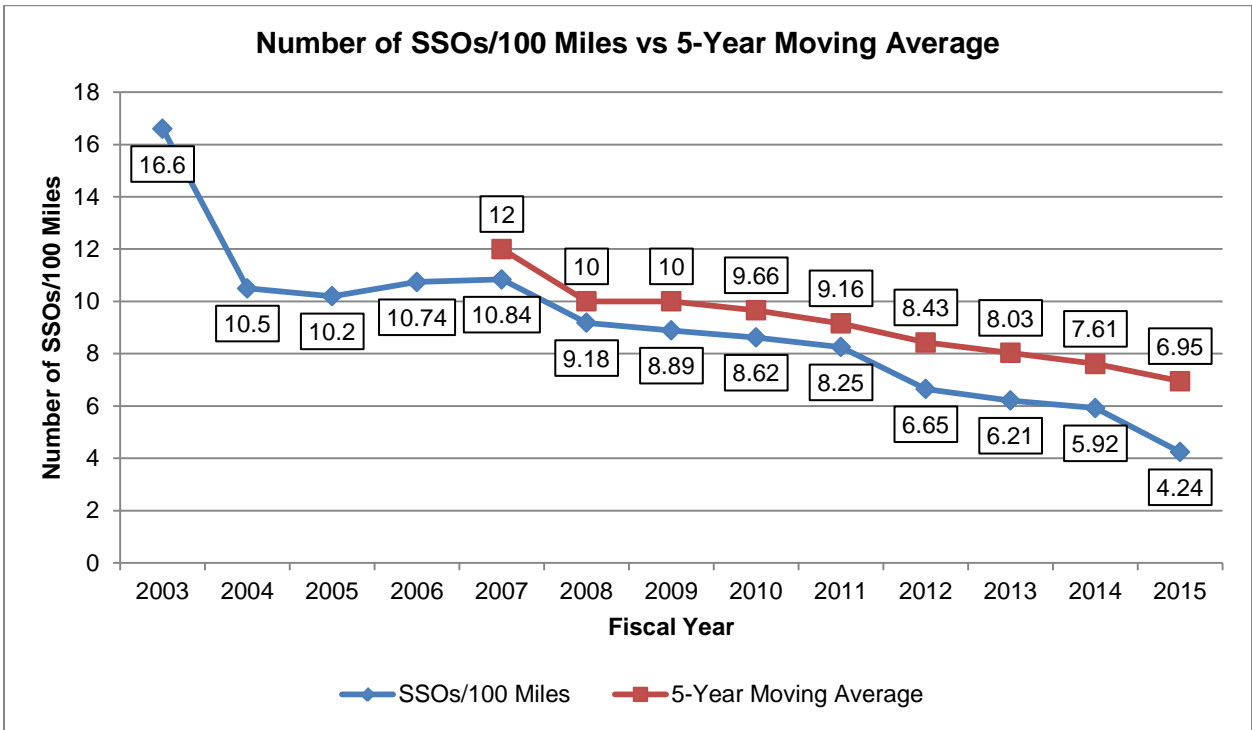
- Our wastewater treatment plants met 99.96 percent of all permitted discharge limits.
- All five wastewater treatment plants earned Peak Performance Awards from the National Association of Clean Water Agencies (NACWA) for the calendar year ending 2014. NACWA Peak Performance Awards recognize wastewater 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 2014 calendar year.
- 11.2 miles of sewer pipe and 175 manholes were rehabilitated, repaired or replaced.
- 206 miles of sewer pipe were treated with root control chemicals.
- 1,057 miles of sewer lines were cleaned (including some multiple cleanings in the same location) by CLTWater Field Operations Staff and an additional 27.8 miles of pipe were cleaned by contractors.
- 430 sewer service connections were replaced.
- More than 97.9 miles of rights of way were cleared by Field Operations and contractors to maintain access to off-street sanitary sewer pipes and to help prevent root intrusions.
- CLTWater continues to update and improve Field Operations' Work & Asset Management (WAM) program and add wastewater treatment plants to the Azteca Cityworks system.
- CLTWater continued the use of continuous improvement and organizational optimization efforts utility wide in FY2015. CLTWater has increased performance levels using continuous improvement processes and techniques coordinated at the department level and implemented at the division level. Continuous improvement is used to achieve and maintain operational and economic competitiveness, and is coordinated with the Balanced Scorecard/Business Planning process. These processes encourage and support operations and management of the Utility in accordance with recognized best practice standards such as ISO, AWWA, NELAP, and others as appropriate. Compliance with recognized standards are measured and externally confirmed by the establishment and implementation of periodic and recurring operational audit, accompanied by monitoring key performance indicators

(KPI) and metrics. In 2007, Mallard Creek WRF was the first City of Charlotte government facility to earn the prestigious ISO 14001:2004 certification. The ISO 14001 EMS international certification program focuses on sustainable optimized operations that first seek to minimize negative impacts on the environment. This first initiative has helped to launch a refocused effort on instituting best practice standards with ongoing audits to all CLTWater operations. Corporate ISO 14001:2004 certification was obtained for CLTWater in May 2010. This corporate certification currently covers Mallard Creek WRF, McDowell Creek WWTP, the Biosolids program, and Sugar Creek WWTP. This certification was upheld by external audit for FY2015. CLTWater is also participating in the AWWA Partnership for Safe Water certification process, which is similar to ISO14001 but more specific to the water sector, for our water treatment facilities and distribution system, including Vest WTP and Lee Duke's WTP at Phase II, while the Distribution System and Franklin WTP are at Phase III of the four phased certification program. On the wastewater collection side of our operations, CLTWater has begun instituting reliability centered maintenance (RCM) practices modeled on ISO55000 methodology using our work and asset management (WAM) system for sewer collection data monitoring, especially as applied to rehabilitation and replacement management. Likewise, CLTWater has implemented verified quality assurance metrics and validation processes by obtaining ISO9001:2008 certification in our customer service division. Obtaining and maintaining certifications is a collaborative effort among many employees throughout CLTWater. This effort helps to ensure that CLTWater is efficient, effective, and transparent in our stewardship of valuable community resources. This ongoing optimization work serves as a continuous improvement model for increased citywide efforts as we move towards an integrated departmental management system, and, ultimately, to greater sustainability. In fact, the City of Charlotte has also engaged a team focused on EMS efforts utilizing staff from multiple departments including CLTWater.

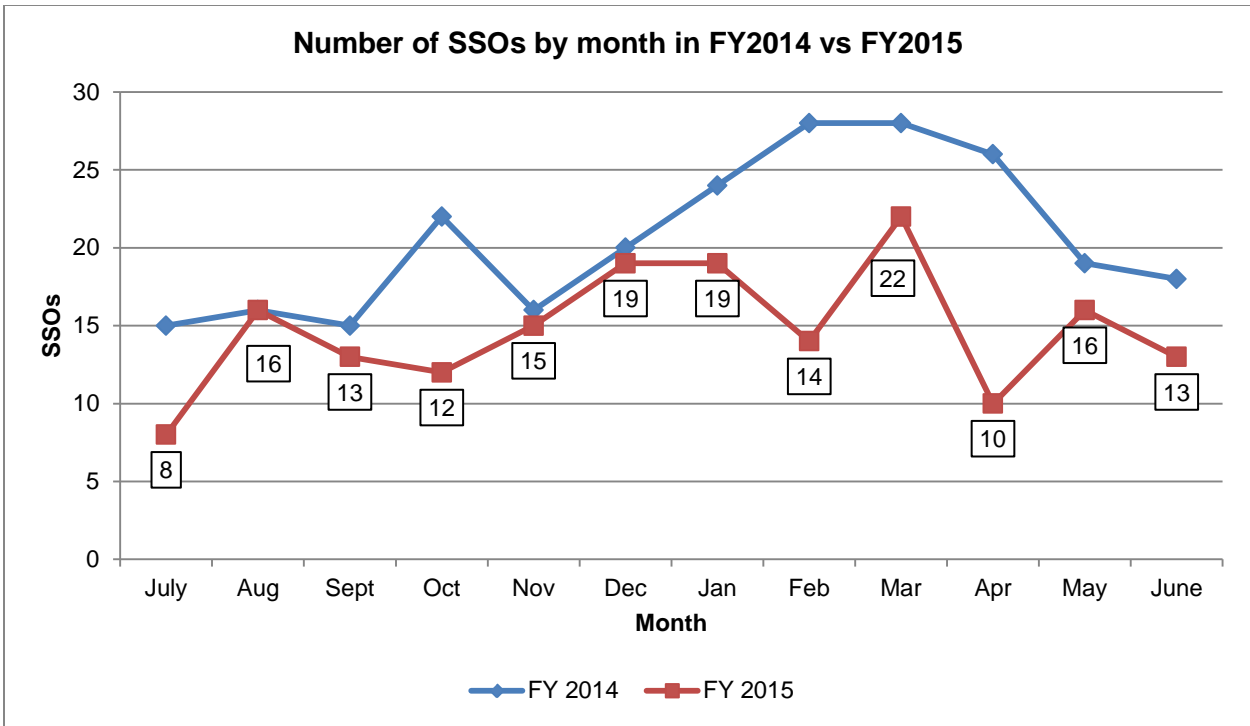
- CLTWater continues to strive to be good stewards in all parts of operations, including fuel consumption. In FY2013, CLTWater participated in a new study called the Alternative Fuels Feasibility Study for the City of Charlotte fleet operations via UNC-Charlotte. This effort was expanded in FY2014 by the completion of a Request for Information process that included vendor concept demonstrations hosted by CLTWater for possible public private partnerships to increase the availability of alternative fueling options citywide such as CNG filling stations. This effort is an exploration step towards a potential citywide RFP for infrastructure associated with alternative fuels and technology for city fleet expected in FY2016. Additionally, several other energy management and air quality initiatives began in FY2013, such as the installation of an electric vehicle charging station at one CLTWater facility and the purchase of electric vehicles, are all steps in the ongoing evolution towards greater sustainability within clean, efficient, cost effective utility operation.
- There are 77 Wastewater Lift Stations serving portions of the CLTWater service area. Staff performed 160 preventive maintenance/electrical tasks for a total of 3131.50 work hours. This does not include twice weekly station checks, wet well

cleaning, emergency generator testing, or emergency/routine repairs. In fiscal year 2015, one new station (Southern Trace) was put in service.

- Construction of the Briar Creek Relief Sewer Project (Phase Two) was completed in Fall 2014. The design on Phase three is nearly complete, and construction of this final phase will start in late 2015 or early 2016.
- Construction of the McAlpine Creek Relief Sewer Project (Phase Three) began in October 2012 and is 90% complete. A fourth phase will be designed and installed at a later time.
- Construction of the McAlpine Creek Wastewater Treatment Plant Effluent Filter Design Build Project began in FY2013 and was completed in 2015. It added filters to improve reliability and provide redundancy. This project did not increase treatment capacities or permitted capacity. This was the first CLTWater Design Build Project.





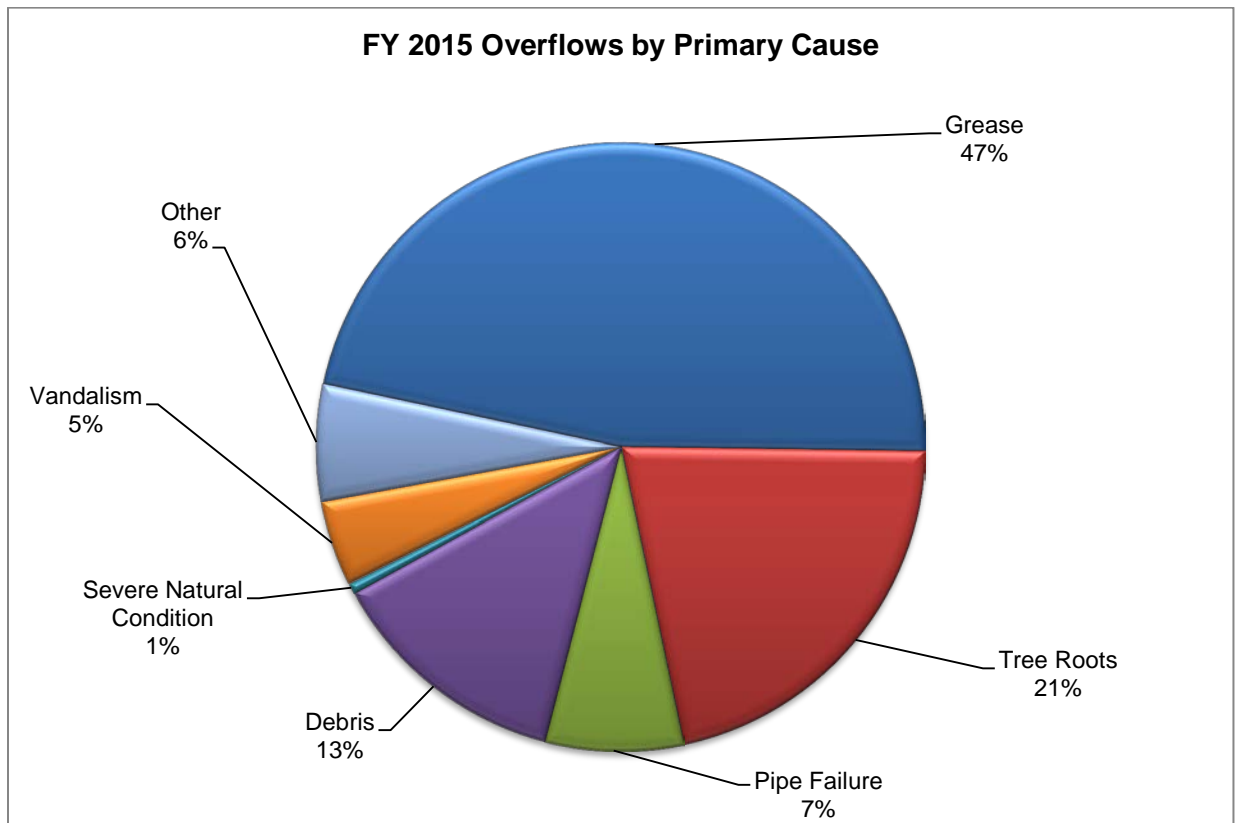


- City staff inspected grease-handling facilities at 4,173 food service establishments and restaurants (not including follow-up inspections) to ensure proper grease disposal.
- Staff issued 111 Notice of Deficiencies (NOD) of which 68 returned to compliance and 43 are still under investigation.
- In total, 8 grease traps were installed by businesses to fulfill NOD requirements.
- The City continued its Grease Free education program to teach proper disposal of this pipe-blocking menace. Inspectors mailed information to 2,331 customers near spill sites and handed out information to 4,120 customers in apartments / multi-family complexes.
- Staff conducted presentations to more than 1,477 children and adults. Multiple Earth Day events also provided opportunities to distribute Grease Free 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 177 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 third 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.



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 sewage can sometimes be captured and pumped back into the sewer system.

There was one rain related spill in the past fiscal year (see below). Heavy rains on 4/19/2015 caused a manhole to overflow. A citizen filmed the event, however CLTWater Field Operations was not made aware of the incident until 6/11/2015. The line was

inspected with Closed Circuit Television on 6/15/15 and further analysis is being conducted.

| <b>Spill Date</b> | <b>Spill Address</b> | <b>Surface Water Name</b> |
|-------------------|----------------------|---------------------------|
| 4/19/2015         | 216 Greenway Street  | Torrence Creek            |

CLT Water Rapid Response Crews are quick to respond when notified of a possible spill. Crews responded to more than 87 percent of the spills within 60 minutes and more than 99.4 percent of the spills within 120 minutes. The state standard for response is 120 minutes or less. There was one spill out of 177 where crews could not respond within 120 minutes. This spill was received as an odor complaint and the responding crew was unable to find spill. A second call was received and the responding crew was able to identify the source. The response time for this SSO was 481 minutes since it was initiated at the first call.

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

Charlotte Water's five wastewater treatment plants met 99.96 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.

During fiscal year 2015 there were two (2) permit limit violations out of a potential of 5,350 compliance tests. All violations were due to toxicity test results that did not meet permit requirements. Both plants who failed this test conducted the required compliance monitoring and returned to compliance within the following months. No adverse effects have been noted on the aquatics communities in the receiving stream and fish, turtles, and other wildlife can be observed daily at our effluent. Please see Section IIB of this report for additional details of these violations.

There were six 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. In all cases the wastewater was at least partially treated.

- Four incidents were during the final stage of treatment, ultra-violet disinfection process.
- Two incidents were earlier in the treatment process where partially treated wastewater escaped due to mechanical malfunctions.

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.

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 Publicly Owned Treatment Works (POTW). 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 POTW.

While industrial and commercial compliance is extremely high in Charlotte-Mecklenburg, identifying sources of potentially harmful discharges is an ongoing challenge. In fiscal year 2015, the Trunkline Monitoring and Grease Free programs also continued, enabling CLTWater's System Protection and Water Quality staff to closely observe what industrial, institutional, and commercial customers discharge into the POTW, identify potential problem areas, and protect the collection system, sewer line workers, treatment plants and the Environment.

- There were over 225 annual inspections and site visits in the past fiscal year.
- CLTWater honored 36 local companies with Environmental Excellence Awards for FY15
  - Two Crown award recipients for Water Conservation and Most Improved
  - Two Platinum recipients for five consecutive years of Gold level compliance and reporting
  - Sixteen Gold recipients for 100% compliance with permit limits and reporting
  - Sixteen Silver recipients for 90% compliance with permit limits and 100% compliance with reporting
- There were 406 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 406 mentioned, 25 Civil or Criminal penalties were assessed.

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

Charlotte Water has an interlocal agreement with Union County to provide contracted operation and maintenance of the 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**

FY 2015 saw the continuing decontamination of the Mallard Creek Wastewater Treatment Plant after the illegal PCB dumping event that occurred February 2014. Charlotte Water staff has worked with regulators and peers to design and implement decontamination plans that contribute to an industry standard for these types of treatment plant impacts. 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. Construction activity resulting from the study includes extensive rehabilitation and upgrades to Irwin and Sugar Creek Wastewater Treatment Plants. Irwin Creek Phase one upgrades are complete (\$20 million). These activities will improve overall efficiency at the plant. Phase two at Irwin Creek Wastewater Treatment Plant is in design and projected to cost \$40 million. At McAlpine Creek Wastewater Treatment Plant, effluent filtration capacity was expanded. This is the first CLTWater Design Build Project. This project will improve reliability and provide redundancy. These projects will not increase treatment permitted capacities.

In recent years CLTWater, Mount Holly, and Belmont entered into memorandums of understanding to create the partnership needed for a new, regional wastewater plant. Based on these agreements, CLTWater purchased 180 acres of land at a former Clariant industrial treatment plant along with the phosphorus and nitrogen discharge 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. DENR. CLTWater is actively working on the municipal agreements and the NPDES permit.

## **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 clicking on the 'Education' link of the CLTWater homepage at [charlottewater.org](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/sewer bill. A news release will be issued before September about this report. 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 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

8.11.2015  
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, 2014 and June 30, 2015.

| Date      | Volume (Gallons) | Volume to Surface Water | Surface Water Name | Fish Kill? | Address                         | Primary Cause |
|-----------|------------------|-------------------------|--------------------|------------|---------------------------------|---------------|
| 7/3/2014  | 1335             | 1335                    | Taggart Creek      | No         | 5039 Airport Center Pkwy.       | Vandalism     |
| 7/4/2014  | 164              | 164                     | McAlpine Creek     | No         | 8333 Pine Field Ct.             | Roots         |
| 7/5/2014  | 1425             | 0                       | McMullen Creek     | No         | 3600 Huckleberry Rd.            | Roots         |
| 7/14/2014 | 88               | 88                      | Sugar Creek        | No         | 529 Sleepy Hollow Rd.           | Grease        |
| 7/15/2014 | 481              | 481                     | Little Sugar Creek | No         | 600 Bilmark Ave.                | Other         |
| 7/19/2014 | 856              | 0                       | McMullen Creek     | No         | 8324 Woodgate Ln.               | Grease        |
| 7/23/2014 | 342              | 0                       | Paw Creek          | No         | 7156 Hunters Glen Dr.           | Grease        |
| 7/31/2014 | 173              | 0                       | McAlpine Creek     | No         | 12335 North Community House Rd. | Grease        |
| 8/2/2014  | 15               | 0                       | McAlpine Creek     | No         | 4148 Moorland Dr.               | Grease        |
| 8/3/2014  | 850              | 850                     | McAlpine Creek     | No         | 5110 Red Cedar Ln.              | Roots         |
| 8/5/2014  | 88               | 88                      | Taggart Creek      | No         | 3701 Carlyle Dr.                | Grease        |
| 8/12/2014 | 79               | 0                       | Four Mile Creek    | No         | 7917 Serendipity Ln.            | Grease        |
| 8/14/2014 | 360              | 180                     | McAlpine Creek     | No         | 3900 River Ridge Rd.            | Grease        |
| 8/16/2014 | 102              | 102                     | McDowell Creek     | No         | 7806 Garnkirk Dr.               | Grease        |
| 8/18/2014 | 288              | 288                     | Briar Creek        | No         | 4518 Kavanaugh Dr.              | Grease        |
| 8/19/2014 | 720              | 0                       | Little Sugar Creek | No         | 301 Manning Dr.                 | Pipe Failure  |

|           |       |       |                    |     |                                |                |
|-----------|-------|-------|--------------------|-----|--------------------------------|----------------|
| 8/21/2014 | 135   | 0     | McMullen Creek     | No  | 6625 Folger Dr.                | Debris In Line |
| 8/21/2014 | 224   | 224   | Taggart Creek      | No  | 3965 Carlyle Dr.               | Grease         |
| 8/21/2014 | 1560  | 1560  | Long Creek         | No  | 4538 Fox Thorne Dr.            | Grease         |
| 8/25/2014 | 4250  | 4250  | Campbell Creek     | No  | 7625 Campbell Creek Ln.        | Grease         |
| 8/26/2014 | 950   | 940   | Doby Creek         | No  | 6901 Ibm Dr.                   | Grease         |
| 8/27/2014 | 15000 | 15000 | Briar Creek        | Yes | 521 Briar Creek Rd.            | Grease         |
| 8/28/2014 | 177   | 0     | Little Sugar Creek | No  | 222 Colonial Ave               | Debris In Line |
| 8/28/2014 | 600   | 600   | Irwin Creek        | No  | 2009 Remount Rd.               | Grease         |
| 9/1/2014  | 455   | 455   | Sugar Creek        | No  | 1710 Ranchwood Dr.             | Grease         |
| 9/2/2014  | 29    | 0     | Mallard Creek      | No  | 3800 Saxonbury Way             | Grease         |
| 9/2/2014  | 285   | 285   | Mallard Creek      | No  | 732 E Mallard Creek Church Rd. | Grease         |
| 9/2/2014  | 1350  | 1350  | McMullen Creek     | Yes | 5716 Monroe Rd.                | Grease         |
| 9/7/2014  | 54    | 0     | Four Mile Creek    | No  | 4715 Wyndfield Ln.             | Roots          |
| 9/8/2014  | 765   | 575   | McAlpine Creek     | No  | 1143 Shadowbrook Ln.           | Vandalism      |
| 9/9/2014  | 471   | 0     | Irwin Creek        | No  | 1317 Rollingwood Dr.           | Grease         |
| 9/10/2014 | 108   | 108   | Irwin Creek        | No  | 1248 West Blvd.                | Debris In Line |
| 9/15/2014 | 108   | 108   | Irwin Creek        | No  | 3819 Fieldcrest Rd.            | Grease         |
| 9/17/2014 | 106   | 0     | Six Mile Creek     | No  | 17018 Harcombe Dr.             | Other          |
| 9/22/2014 | 19    | 0     | Briar Creek        | No  | 6918 The Plaza                 | Roots          |
| 9/25/2014 | 25    | 0     | Little Sugar Creek | No  | 1430 Park Dr.                  | Roots          |
| 9/29/2014 | 127   | 0     | Lake Norman        | No  | 19601 Bustle Rd.               | Pipe Failure   |
| 10/5/2014 | 50    | 0     | Little Sugar Creek | No  | 810 E 34th St.                 | Pipe Failure   |



|            |       |      |                    |    |                                   |                |
|------------|-------|------|--------------------|----|-----------------------------------|----------------|
| 10/6/2014  | 970   | 970  | Neal Branch        | No | 11700 Steele Creek Rd.            | Debris In Line |
| 10/7/2014  | 910   | 910  | McMullen Creek     | No | 2442 Cloister Dr.                 | Debris In Line |
| 10/10/2014 | 87    | 0    | Four Mile Creek    | No | 6407 Mock Orange Dr.              | Roots          |
| 10/11/2014 | 1185  | 1185 | McMullen Creek     | No | 9440 Heydon Hall Cr.              | Debris In Line |
| 10/17/2014 | 100   | 100  | Mallard Creek      | No | 5700 Painted Fern Ct.             | Roots          |
| 10/22/2014 | 180   | 0    | Lake Norman        | No | 18334 Nantz Rd.                   | Other          |
| 10/23/2014 | 990   | 990  | Irwin Creek        | No | 113 Crestway Cr.                  | Pipe Failure   |
| 10/23/2014 | 2725  | 2725 | Doby Creek         | No | 6215 Equipment Dr.                | Other          |
| 10/28/2014 | 192   | 192  | Paw Creek Branch   | No | 1505 Allenbrook Dr.               | Debris In Line |
| 10/31/2014 | 53    | 0    | Little Sugar Creek | No | 10900 South Commerce Blvd.        | Pipe Failure   |
| 10/31/2014 | 59    | 0    | McAlpine Creek     | No | 3808 Trappers Run Dr.             | Grease         |
| 11/3/2014  | 46200 | 6160 | Steele Creek       | No | 14523 Carowinds Blvd.             | Pipe Failure   |
| 11/5/2014  | 318   | 0    | Briar Creek        | No | 411 N. Wendover Rd.               | Roots          |
| 11/7/2014  | 300   | 300  | Lake Norman        | No | 17343 Connor Quay Ct. (Cornelius) | Pipe Failure   |
| 11/7/2014  | 380   | 0    | Clarks Creek       | No | 10040 Avon Farm Ln.               | Roots          |
| 11/11/2014 | 270   | 135  | Little Sugar Creek | No | 1900 Clement Ave                  | Debris In Line |
| 11/18/2014 | 770   | 770  | McClure Creek      | No | 3023 Robin Rd.                    | Roots          |
| 11/20/2014 | 2800  | 0    | Little Sugar Creek | No | 312 E 8th St.                     | Other          |
| 11/20/2014 | 1560  | 780  | Taggart Creek      | No | 4101 Meadow Oak Dr.               | Grease         |
| 11/22/2014 | 5     | 0    | Little Sugar Creek | No | 525 W Craighead Rd.               | Debris In Line |
| 11/23/2014 | 580   | 580  | Reedy Creek        | No | 10309 Battle Ct.                  | Debris In Line |

|            |      |      |                    |    |                            |                |
|------------|------|------|--------------------|----|----------------------------|----------------|
| 11/24/2014 | 96   | 24   | Mallard Creek      | No | 1009 Morning Glory Dr.     | Grease         |
| 11/24/2014 | 580  | 0    | McMullen Creek     | No | 300 Chillingworth Ln.      | Roots          |
| 11/26/2014 | 2130 | 2130 | McAlpine Creek     | No | 5349 Five Knolls Dr.       | Roots          |
| 11/27/2014 | 1515 | 758  | McMullen Creek     | No | 3219 Seven Eagles          | Debris In Line |
| 11/29/2014 | 126  | 0    | McDowell Creek     | No | 12403 Flatbush Dr.         | Grease         |
| 12/2/2014  | 350  | 350  | Four Mile Creek    | No | 2816 Oxborough Dr.         | Roots          |
| 12/4/2014  | 590  | 590  | McDowell Creek     | No | 9705 Rosewood Meadow Ln.   | Vandalism      |
| 12/9/2014  | 1010 | 1010 | McKee Creek        | No | 7704 Bondhaven Dr.         | Grease         |
| 12/10/2014 | 900  | 0    | Little Sugar Creek | No | 501 N College St.          | Debris In Line |
| 12/10/2014 | 25   | 0    | Steele Creek       | No | 11401 Antebellum Dr.       | Grease         |
| 12/13/2014 | 141  | 0    | Briar Creek        | No | 1500 Morningside Dr.       | Debris In Line |
| 12/13/2014 | 50   | 0    | McAlpine Creek     | No | 11500 Carolina Place Pkwy. | Vandalism      |
| 12/15/2014 | 2400 | 1200 | Torrence Creek     | No | 13100 Statesville Rd.      | Grease         |
| 12/16/2014 | 2175 | 2175 | Little Sugar Creek | No | 1107 N Davidson St.        | Other          |
| 12/19/2014 | 370  | 0    | Little Sugar Creek | No | 1100 South Blvd            | Debris In Line |
| 12/19/2014 | 12   | 12   | Long Creek         | No | 5621 Lawnmeadow Dr.        | Grease         |
| 12/19/2014 | 49   | 0    | Paw Creek          | No | 7032 Lakeland Dr.          | Roots          |
| 12/21/2014 | 750  | 750  | Clems Branch       | No | 15647 Donnington Dr.       | Debris In Line |
| 12/23/2014 | 245  | 245  | Upper Little Sugar | No | 4242 Folkston Dr.          | Vandalism      |
| 12/25/2014 | 280  | 280  | Irwin Creek        | No | 540 Pressley Rd.           | Grease         |
| 12/26/2014 | 326  | 326  | Four Mile Creek    | No | 701 E John St.             | Grease         |

|            |      |      |                    |    |                            |                |
|------------|------|------|--------------------|----|----------------------------|----------------|
| 12/26/2014 | 33.5 | 0    | Little Sugar Creek | No | 4029 Redwood Ave           | Grease         |
| 12/29/2014 | 215  | 215  | Doby Creek         | No | 1400 Ventura Way Dr.       | Grease         |
| 12/29/2014 | 55   | 55   | Irwin Creek        | No | 3405 Fairfax Woods Dr.     | Grease         |
| 1/1/2015   | 261  | 261  | Edwards Branch     | No | 1016 Dresden Dr. West      | Grease         |
| 1/2/2015   | 5150 | 4635 | Little Sugar Creek | No | 1107 N Davidson St         | Pipe Failure   |
| 1/5/2015   | 210  | 210  | Edwards Branch     | No | 701 Briar Creek Rd Lot 335 | Grease         |
| 1/7/2015   | 345  | 345  | McAlpine Creek     | No | 1378 Bellemeade Ln.        | Grease         |
| 1/9/2015   | 136  | 0    | Lower Little Sugar | No | 2407 Bergen Ct.            | Roots          |
| 1/9/2015   | 20   | 0    | Stewart Creek      | No | 601 Woodruff Place         | Grease         |
| 1/17/2015  | 300  | 300  | Briar Creek        | No | 3523 Burkland Dr.          | Grease         |
| 1/17/2015  | 400  | 400  | Kings Branch       | No | 838 Tyvola Rd.             | Debris In Line |
| 1/17/2015  | 93   | 0    | Dairy Branch       | No | 804 Brookside Ave          | Grease         |
| 1/18/2015  | 504  | 252  | Lake Norman        | No | 18948 Mary Ardrey Cr.      | Pipe Failure   |
| 1/19/2015  | 665  | 0    | Irwin Creek        | No | 1407 Parker Dr.            | Grease         |
| 1/21/2015  | 150  | 150  | Upper Little Sugar | No | 345 Wellingford St.        | Grease         |
| 1/24/2015  | 450  | 0    | Campbell Creek     | No | 4778 Old Lantern Way       | Grease         |
| 1/28/2015  | 990  | 990  | Irwin Creek        | No | 5046 Elizabeth Rd.         | Vandalism      |
| 1/28/2015  | 1005 | 1005 | Kings Branch       | No | 9532 Hebron Commerce Dr.   | Pipe Failure   |
| 1/29/2015  | 50   | 50   | Lake Norman        | No | 100 North Harbor Place     | Grease         |
| 1/29/2015  | 32   | 32   | McAlpine Creek     | No | 6748 Windyrush Rd.         | Grease         |

|           |      |      |                    |    |                              |                |
|-----------|------|------|--------------------|----|------------------------------|----------------|
| 1/30/2015 | 2675 | 2675 | Campbell Creek     | No | 5719 Cedars East Ct.         | Grease         |
| 1/31/2015 | 43   | 0    | McKee Creek        | No | 7130 Twillingate Dr.         | Roots          |
| 2/5/2015  | 46   | 0    | Little Sugar Creek | No | 520 E 22nd St.               | Grease         |
| 2/5/2015  | 336  | 336  | Little Sugar Creek | No | 337 Wellingford St.          | Grease         |
| 2/6/2015  | 138  | 0    | Reedy Creek        | No | 6435 Alder Ct                | Grease         |
| 2/8/2015  | 162  | 162  | McDowell Creek     | No | 19204 Meridian St.           | Roots          |
| 2/8/2015  | 285  | 214  | Little Sugar       | No | 6324 Hazelton Dr.            | Grease         |
| 2/8/2015  | 540  | 540  | Briar Creek        | No | 3801 Sheridan Dr.            | Grease         |
| 2/10/2015 | 1380 | 1380 | Irwin Creek        | No | 4834 Elizabeth Rd            | Grease         |
| 2/12/2015 | 420  | 420  | McMullen Creek     | No | 2825 Eastburn Rd             | Vandalism      |
| 2/12/2015 | 1500 | 1500 | Edwards Branch     | No | 1535 Lansdale Dr.            | Grease         |
| 2/13/2015 | 61   | 0    | McAlpine Creek     | No | 6556 Deermont Ct             | Grease         |
| 2/14/2015 | 210  | 210  | McAlpine Creek     | No | 7625 Summerwood Ln.          | Grease         |
| 2/15/2015 | 60   | 0    | McMullen Creek     | No | 9924 Park Springs Ct.        | Roots          |
| 2/15/2015 | 246  | 246  | Mallard Creek      | No | 1224 John Kirk Dr.           | Debris In Line |
| 2/22/2015 | 3786 | 3786 | Sugar Creek        | No | 1107 Cone Ave                | Roots          |
| 3/2/2015  | 710  | 710  | Little Sugar Creek | No | 500 Queens Rd.               | Vandalism      |
| 3/3/2015  | 129  | 0    | Sugar Creek        | No | 1545 Choyce Ave              | Roots          |
| 3/4/2015  | 1330 | 1330 | Six Mile Creek     | No | 10028 Highlands Crossing Dr. | Debris In Line |
| 3/6/2015  | 500  | 500  | Sugar Creek        | No | 1800 Associates Ln.          | Grease         |
| 3/6/2015  | 114  | 0    | Kings Branch       | No | 5215 South Blvd Apartment B  | Grease         |
| 3/6/2015  | 90   | 0    | McMullen Creek     | No | 1035 Rama Rd. Lot 512        | Roots          |

|           |      |      |                    |    |                         |                |
|-----------|------|------|--------------------|----|-------------------------|----------------|
| 3/7/2015  | 385  | 288  | McAlpine Creek     | No | 5379 Five Knolls Dr.    | Roots          |
| 3/8/2015  | 1776 | 1776 | Four Mile Creek    | No | 2400 Honey Creek Ln.    | Debris In Line |
| 3/10/2015 | 405  | 405  | Irwin Creek        | No | 1248 West Blvd.         | Other          |
| 3/12/2015 | 165  | 165  | Doby Creek         | No | 6400 Reagan Dr.         | Grease         |
| 3/12/2015 | 580  | 580  | Ticer Branch       | No | 4525 Keeter Dr.         | Grease         |
| 3/12/2015 | 436  | 436  | Briar Creek        | No | 2208 Thetford Ct.       | Roots          |
| 3/13/2015 | 1440 | 1440 | Little Sugar Creek | No | 751 Edgehill Rd. South  | Grease         |
| 3/16/2015 | 620  | 620  | Little Sugar Creek | No | 5727 Glenkirk Rd.       | Grease         |
| 3/18/2015 | 630  | 630  | Little Sugar Creek | No | 2740 Heidleburg Ln.     | Grease         |
| 3/23/2015 | 321  | 321  | Swan Run Branch    | No | 5160 Red Cedar Ln.      | Grease         |
| 3/23/2015 | 670  | 0    | McAlpine Creek     | No | 7018 Chadwyck Farms Dr. | Grease         |
| 3/24/2015 | 960  | 960  | Campbell Creek     | No | 5727 Cedars East Ct.    | Grease         |
| 3/25/2015 | 515  | 515  | Back Creek         | No | 10404 Hellebore Rd.     | Grease         |
| 3/26/2015 | 60   | 0    | McAlpine Creek     | No | 6000 Conference Dr.     | Roots          |
| 3/29/2015 | 156  | 0    | Stowe Branch       | No | 8003 Kelburn Ln.        | Pipe Failure   |
| 3/31/2015 | 164  | 0    | McMullen Creek     | No | 4522 Sharon View Rd.    | Roots          |
| 4/6/2015  | 45   | 0    | Lake Norman        | No | 17012 Island View Dr.   | Pipe Failure   |
| 4/12/2015 | 49   | 0    | Sardis Branch      | No | 10204 Sardis Oaks Rd.   | Grease         |
| 4/14/2015 | 100  | 0    | McMullen Creek     | No | 5501 Carnegie Blvd.     | Roots          |
| 4/18/2015 | 1445 | 1445 | Mallard Creek      | No | 8650 Davis Lake Pkwy.   | Grease         |

|           |      |      |                       |    |                                      |                             |
|-----------|------|------|-----------------------|----|--------------------------------------|-----------------------------|
| 4/19/2015 | 200  | 0    | Torrence Creek        | No | 216 Greenway St.<br>(Huntersville)   | Severe Natural<br>Condition |
| 4/20/2015 | 495  | 495  | Irwin Creek           | No | 2835 Fairstone<br>Ave                | Grease                      |
| 4/21/2015 | 282  | 282  | Briar Creek           | No | 1001 Palmer<br>Plaza Ln.             | Grease                      |
| 4/23/2015 | 765  | 383  | Ticer Branch<br>Creek | No | 6831 Calton Ln.                      | Roots                       |
| 4/26/2015 | 50   | 0    | Coffey Creek          | No | 7501 Jacobs Fork<br>Ln.              | Roots                       |
| 4/26/2015 | 61   | 61   | Four Mile Creek       | No | 5244 Bevington<br>Place              | Roots                       |
| 5/2/2015  | 66   | 0    | McDowell Creek        | No | 10219 Footsman<br>Place              | Grease                      |
| 5/3/2015  | 450  | 450  | Little Sugar Creek    | No | 241 Wakefield Dr.                    | Debris In Line              |
| 5/4/2015  | 1755 | 1755 | Coffey Creek          | No | 2114 Arrowood<br>Rd.                 | Roots                       |
| 5/5/2015  | 1575 | 1575 | Little Sugar Creek    | No | 309 Drury Dr.                        | Roots                       |
| 5/6/2015  | 900  | 810  | McAlpine Creek        | No | 11230 Ballantyne<br>Trace Ct.        | Grease                      |
| 5/6/2015  | 410  | 328  | Stony Creek           | No | 13925 Mallard<br>Lake Rd.            | Debris In Line              |
| 5/7/2015  | 4200 | 3690 | Toby Creek            | No | 7252 Leaves Ln.                      | Roots                       |
| 5/7/2015  | 165  | 165  | Irwin Creek           | No | 1031 Scottsdale<br>Rd.               | Grease                      |
| 5/10/2015 | 880  | 880  | Coffey Creek          | No | 7705 S Tryon St.                     | Grease                      |
| 5/12/2015 | 3280 | 3280 | Little Sugar Creek    | No | 6023 Park South<br>Dr.               | Debris In Line              |
| 5/16/2015 | 8070 | 7263 | Stewart Creek         | No | 4440 Northpointe<br>Industrial Blvd. | Grease                      |
| 5/16/2015 | 60   | 0    | Lake Norman           | No | 13825 Island Dr.                     | Other                       |
| 5/21/2015 | 395  | 395  | McIntyre Creek        | No | 4025 Fifendrum<br>Ln.                | Grease                      |
| 5/22/2015 | 51   | 0    | Sugar Creek           | No | 705 Lakeview Dr.                     | Roots                       |

|           |       |       |                    |     |                                      |                |
|-----------|-------|-------|--------------------|-----|--------------------------------------|----------------|
| 5/24/2015 | 125.5 | 0     | Lake Norman        | No  | 17818 John Connor Rd.                | Pipe Failure   |
| 5/30/2015 | 706   | 353   | Little Sugar Creek | No  | 1520 South Blvd.                     | Grease         |
| 6/1/2015  | 715   | 715   | Four Mile Creek    | No  | 10914 Lee Manor Ln.                  | Grease         |
| 6/13/2015 | 500   | 0     | McAlpine Creek     | No  | 5312 Walnut Grove Ln.                | Roots          |
| 6/17/2015 | 150   | 0     | Big Sugar Creek    | No  | 9211 Belcaro Ln.                     | Other          |
| 6/17/2015 | 14650 | 14650 | Briar Creek        | Yes | 3621 Randolph Rd.                    | Roots          |
| 6/19/2015 | 500   | 500   | Lake Cornelius     | No  | 725 Peninsula Dr. (Davidson)         | Grease         |
| 6/23/2015 | 2373  | 2373  | Neal Branch        | No  | 12420 Means Ct.                      | Debris In Line |
| 6/24/2015 | 285   | 285   | Four Mile Creek    | No  | 600 Deer Creek Dr.                   | Grease         |
| 6/26/2015 | 8310  | 8310  | Dixon Branch       | No  | 8510 Prosser Way                     | Grease         |
| 6/27/2015 | 845   | 845   | Briar Creek        | No  | 3719 Barclay Downs Dr.               | Roots          |
| 6/30/2015 | 215   | 215   | Little Sugar Creek | No  | 412 N Davidson St.                   | Other          |
| 6/30/2015 | 625   | 625   | Briar Creek        | No  | 800 E Tremont Ave                    | Grease         |
| 6/30/2015 | 110   | 0     | McAlpine Creek     | No  | 7504 Fire Tree Ln.                   | Roots          |
| 6/30/2015 | 417   | 0     | Lake Norman        | No  | 18908 Serenity Point Ln. (Cornelius) | Other          |

**TOTAL NUMBER OF FY2015 COLLECTION SYSTEM SPILLS: 177**

Volume Safely Collected, Treated & Discharged During Fiscal Year 2015:  
 Volume Spilled:

29,347,000,000 Gallons  
 200,352 Gallons

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

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**

| MONTH           | PERMIT LIMIT VIOLATIONS | REPORTING REQUIREMENT VIOLATIONS |
|-----------------|-------------------------|----------------------------------|
| July, 2014      | NA                      | NA                               |
| August, 2014    | NA                      | NA                               |
| September, 2014 | NA                      | NA                               |
| October, 2014   | NA                      | NA                               |
| November, 2014  | NA                      | NA                               |
| December, 2014  | NA                      | NA                               |
| January, 2015   | NA                      | NA                               |
| February, 2015  | NA                      | NA                               |
| March, 2015     | NA                      | NA                               |
| April, 2015     | NA                      | NA                               |
| May, 2015       | NA                      | NA                               |
| June, 2015      | NA                      | NA                               |



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

| <b>MONTH</b>    | <b>PERMIT LIMIT VIOLATIONS</b>  | <b>REPORTING REQUIREMENT VIOLATIONS</b> |
|-----------------|---------------------------------|---|
| July, 2014      | NA                              | NA                                      |
| August, 2014    | NA                              | NA                                      |
| September, 2014 | NA                              | NA                                      |
| October, 2014   | NA                              | NA                                      |
| November, 2014  | NA                              | NA                                      |
| December, 2014  | NA                              | NA                                      |
| January, 2015   | NA                              | NA                                      |
| February, 2015  | NA                              | NA                                      |
| March, 2015     | NA                              | NA                                      |
| April, 2015     | NA                              | NA                                      |
| May, 2015       | Toxicity failure second species | NA                                      |
| June, 2015      | NA                              | NA                                      |

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

| <b>MONTH</b>    | <b>PERMIT LIMIT VIOLATIONS</b> | <b>REPORTING REQUIREMENT VIOLATIONS</b> |
|-----------------|--------------------------------|---|
| July, 2014      | NA                             | NA                                      |
| August, 2014    | NA                             | NA                                      |
| September, 2014 | NA                             | NA                                      |
| October, 2014   | NA                             | NA                                      |
| November, 2014  | NA                             | NA                                      |
| December, 2014  | NA                             | NA                                      |
| January, 2015   | NA                             | NA                                      |
| February, 2015  | NA                             | NA                                      |
| March, 2015     | NA                             | NA                                      |
| April, 2015     | NA                             | NA                                      |
| May, 2015       | NA                             | NA                                      |
| June, 2015      | NA                             | NA                                      |

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

| <b>MONTH</b>    | <b>PERMIT LIMIT VIOLATIONS</b> | <b>REPORTING REQUIREMENT VIOLATIONS</b> |
|-----------------|--------------------------------|---|
| July, 2014      | NA                             | NA                                      |
| August, 2014    | NA                             | NA                                      |
| September, 2014 | NA                             | NA                                      |
| October, 2014   | NA                             | NA                                      |
| November, 2014  | NA                             | NA                                      |
| December, 2014  | NA                             | NA                                      |
| January, 2015   | NA                             | NA                                      |
| February, 2015  | NA                             | NA                                      |
| March, 2015     | NA                             | NA                                      |
| April, 2015     | NA                             | NA                                      |
| May, 2015       | NA                             | NA                                      |
| June, 2015      | NA                             | NA                                      |

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

| <b>MONTH</b>    | <b>PERMIT LIMIT VIOLATIONS</b> | <b>REPORTING REQUIREMENT VIOLATIONS</b> |
|-----------------|--------------------------------|---|
| July, 2014      | NA                             | NA                                      |
| August, 2014    | NA                             | NA                                      |
| September, 2014 | NA                             | NA                                      |
| October, 2014   | NA                             | NA                                      |
| November, 2014  | NA                             | NA                                      |
| December, 2014  | NA                             | NA                                      |
| January, 2015   | NA                             | NA                                      |
| February, 2015  | Toxicity failure first species | NA                                      |
| March, 2015     | NA                             | NA                                      |
| April, 2015     | NA                             | NA                                      |
| May, 2015       | NA                             | NA                                      |
| June, 2015      | NA                             | NA                                      |