

Clean Water 2020 Program

CONSENT DECREE QUARTERLY REPORT

October 1, 2018 – December 31, 2018

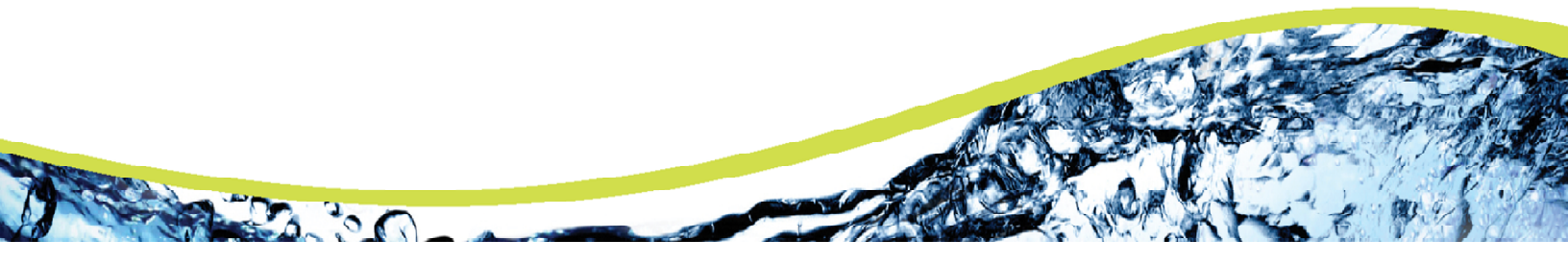


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Section 1 Introduction

1.1 Summary of Reporting Requirements

On May 21, 2014, the City of Columbia (City) entered into a Consent Decree (CD) with the United States Environmental Protection Agency (EPA), the United States Department of Justice (DOJ) and the South Carolina Department of Health and Environmental Control (SCDHEC). To fulfill the reporting requirements as defined in Section IX.39.a of the CD, the City has prepared this *Quarterly Report* that includes the following information (as excerpted from the CD):

1. A description of all projects and activities conducted during the most recently completed calendar quarter to comply with the requirements of this Consent Decree, in Gantt chart or similar format. This description shall include completion percentages of early action capital improvement projects under Paragraph 10, continuing sewer assessments under the CSAP, and the subsequent remedial actions under the IR Report;
2. The date, time, location, source, duration, estimated volume, receiving water (if any), cause, and actions taken to repair or otherwise resolve the cause of all SSOs for the most recently completed quarter in a tabulated electronic format;
3. The anticipated projects and activities that will be performed in the next quarter to comply with the requirements of this Consent Decree, in Gantt chart or similar format;
4. Any additional information that demonstrates that Columbia is implementing the remedial measures required in this Consent Decree; and
5. The results of water quality monitoring conducted during the previous Calendar Quarter as part of the SEP described in Appendix I of the Consent Decree.

1.2 Report Organization

This Quarterly Report is organized as follows:

Section 1 – Introduction

This section includes a summary of the reporting requirements and describes the report organization.

Section 2 – Schedule of Projects and Activities

This section addresses the requirements of Sections IX.39.a.(i) and IX.39.a.(iii) of the Consent Decree. The section includes the projects and activities conducted during the most recently completed calendar

quarter to comply with the requirements of the CD as well as the anticipated projects and activities that will be performed in the next quarter to comply with the requirements of the CD. A Gantt chart schedule of these activities is provided and includes completion percentages of continuing sewer assessments under the CSAP and the subsequent remedial actions under the IR Report, as applicable.

Section 3 – Additional Information Demonstrating Implementation of Consent Decree Requirements

This section addresses the requirements of Section IX.39.a.(iv) of the Consent Decree and includes additional information that demonstrates that Columbia is implementing the remedial measures required in the CD. Information supplemental to that which is provided in Section 2 is provided in this section.

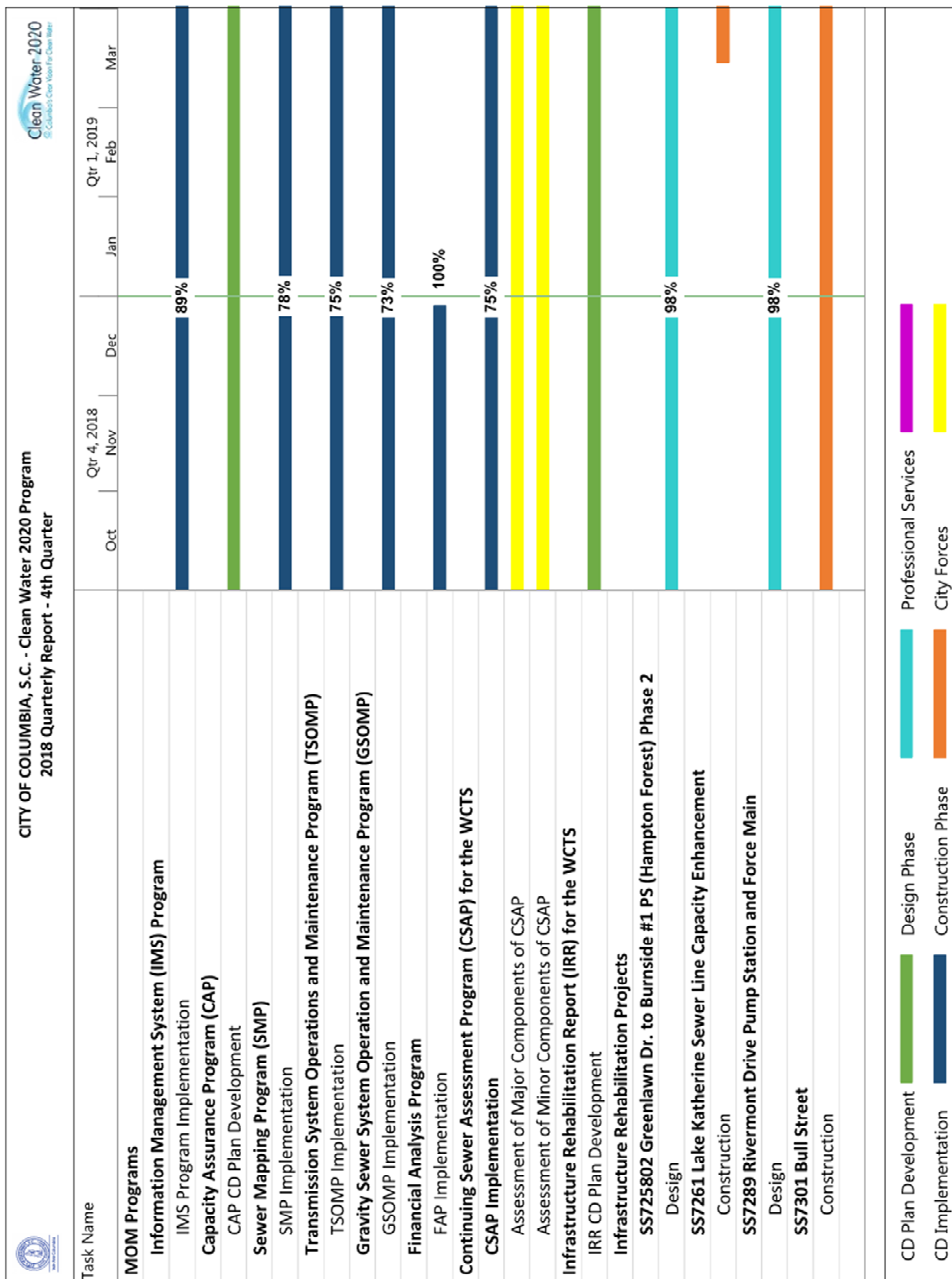
Section 4 – Quarterly SSO Report

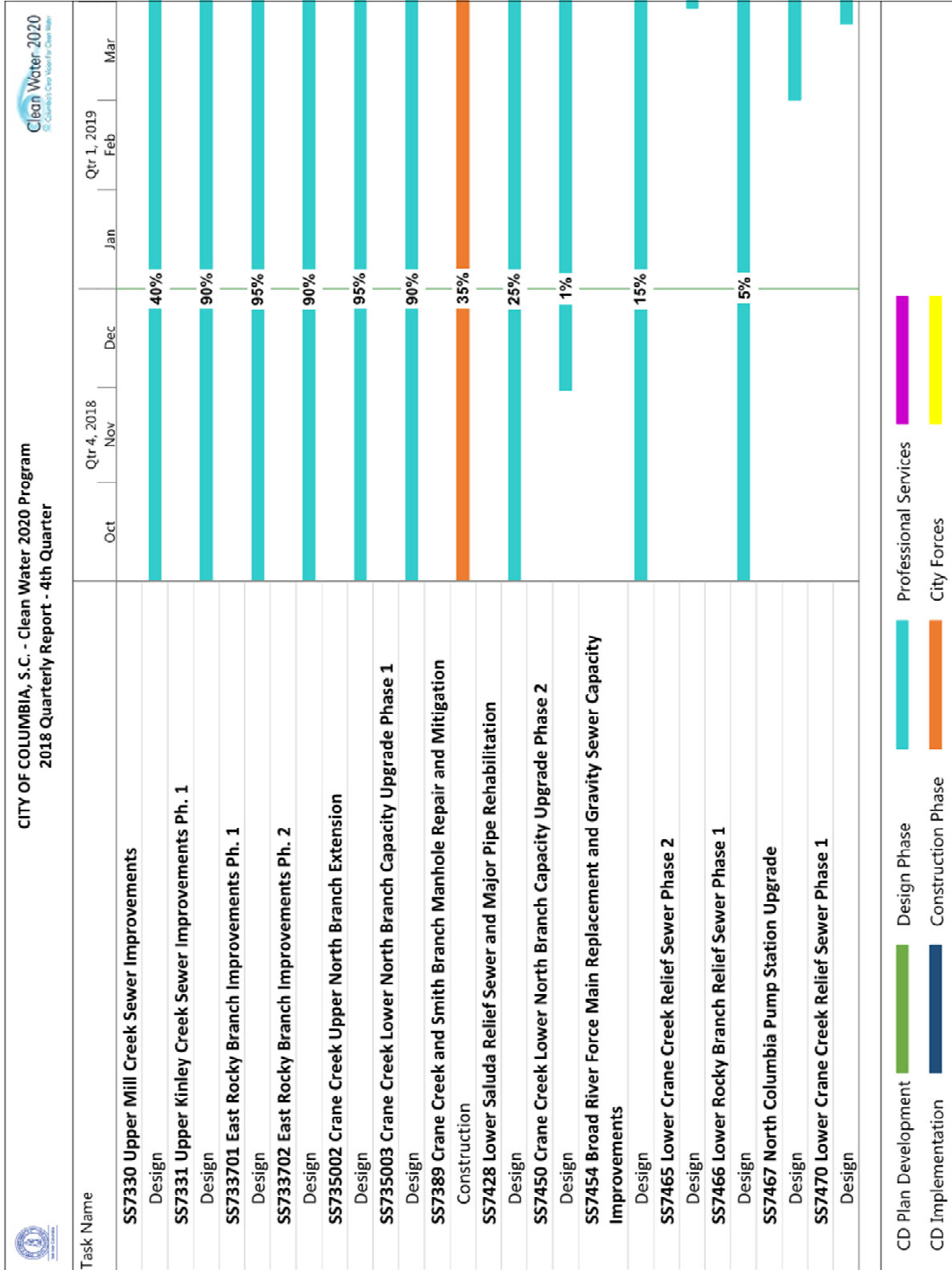
This section addresses the requirements of Section IX.39.a.(ii) of the Consent Decree and provides a tabular listing of sanitary sewer overflows (SSOs). The table includes the date, time, location, source, duration, estimated volume, receiving water (if any), cause, and actions taken to repair or otherwise resolve the cause of all SSOs that occurred during the most recently completed calendar quarter.

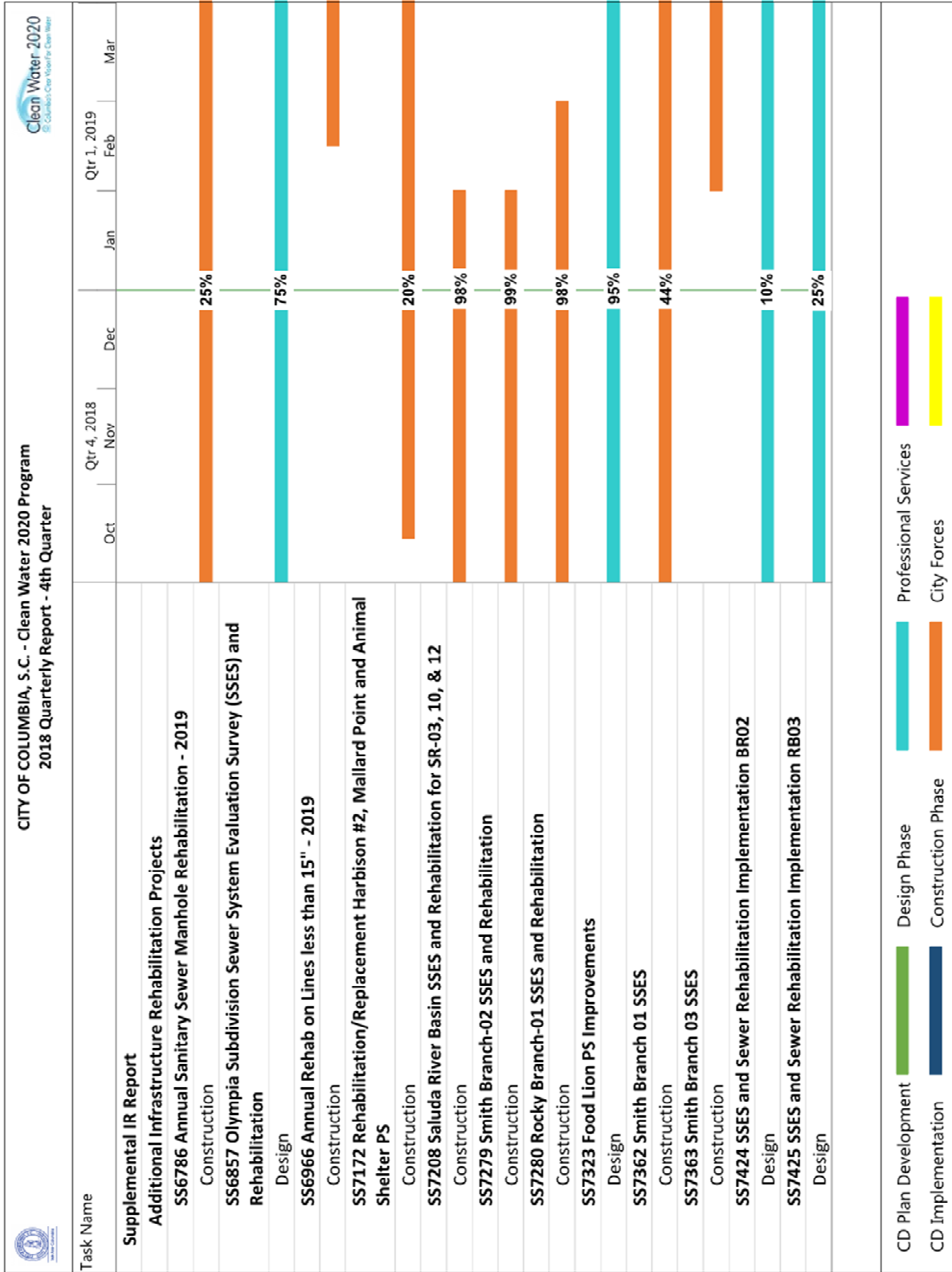
Section 5 – SEP Water Quality Monitoring Results

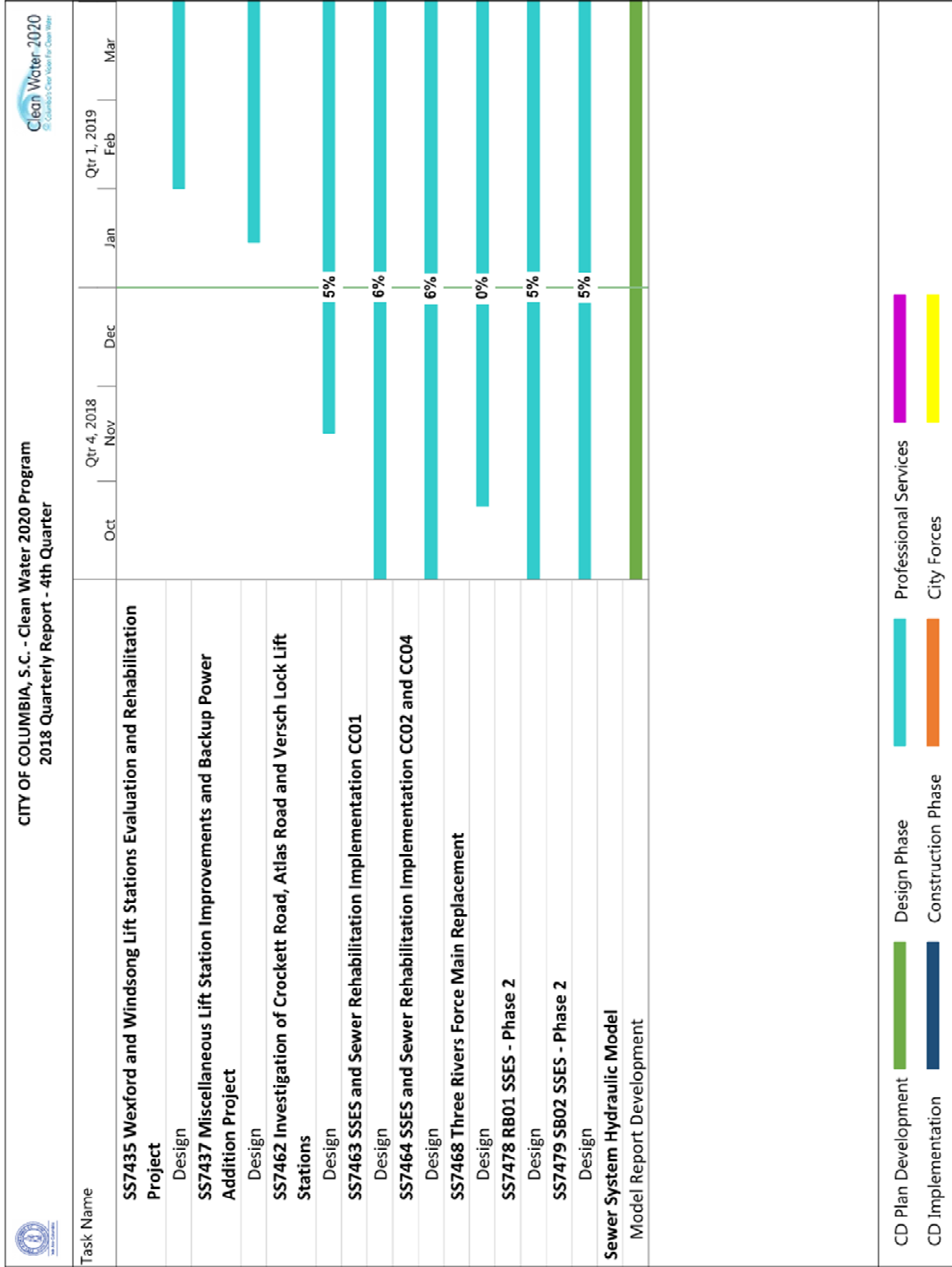
This section addresses the requirements of Section IX.39.a.(v) of the Consent Decree and provides the results of water quality monitoring conducted during the previous Calendar Quarter as part of the SEP described in Appendix I of the CD.

Section 2 Schedule of Projects and Activities









Section 3 Additional Information Demonstrating Implementation of Consent Decree Requirements

In accordance with Section IX.39.a.(iv) of the CD, the following section provides additional information that demonstrates that the City is implementing the remedial measures required in the CD.

3.1 MOM Programs

In accordance with Section V.12 of the CD, the City is developing and implementing specific Management, Operations, and Maintenance (MOM) programs. The Program elements addressed in this section provide information regarding activities involving the Metro WWTP as well as the City's Wastewater Collection and Transmission System (WCTS).

3.1.1 Information Management System (IMS) Program

The IMS Program was submitted to EPA and SCDHEC on January 4, 2016. The City received final approval of the IMS Program from EPA and SCDHEC on May 23, 2016.

The activities completed or in progress during the current reporting period are as follows:

- Sewer Mapping Program – 78% Complete

3.1.2 Sewer Mapping Program

In accordance with the requirements of the CD, the City was to develop and submit a Sewer Mapping Program (SMP) to EPA and SCDHEC within 60 days of the date of entry of the CD. The City received final approval of the SMP from EPA and SCDHEC on December 9, 2014.

Projects and significant activities completed during the current reporting period:

- The City continues to complete the electronic mapping of each Sewer Basin in accordance with the approved SMP implementation plan. Progress for each WCTS Minor Gravity Mapping basin is as follows:
 - West Columbia Basin – 95% complete
 - Smith Branch Basin – 82% complete
 - Saluda River Basin – 88% complete
 - Rocky Branch Basin – 49% complete
 - Mill Creek Basin – 28% complete
 - Gills Creek Basin – 37% complete
 - Crane Creek Basin – 67% complete
 - Broad River Basin – 27% complete
- Progress for each WCTS Major Gravity Mapping basin is as follows:
 - West Columbia Basin – 100% complete (Mapping complete as of November 20, 2017.)

- Smith Branch Basin – 100% complete (Mapping complete as of November 20, 2017.)
- Saluda River Basin – 100% complete (Mapping complete as of May 23, 2018.)
- Rocky Branch Basin – 100% complete (Mapping complete as of May 23, 2018.)
- Mill Creek Basin – 100% complete (Mapping complete as of November 23, 2018.)
- Gills Creek Basin – 100% complete (Mapping complete as of November 23, 2018.)
- Crane Creek Basin – 100% complete (Mapping complete as of November 23, 2018.)
- Broad River Basin – 100% complete (Mapping complete as of November 23, 2018.)
- As of November 23, 2018, all WCTS Major Gravity Mapping requirements associated with the SMP have been completed.

3.1.3 Transmission System Operations and Maintenance Program (TSOMP)

The TSOMP was submitted to EPA and SCDHEC on May 18, 2015. The City received final approval of the TSOMP from EPA and SCDHEC on September 2, 2016.

The activities completed or in progress during the current reporting period are as follows:

- SCADA System Enhancements – 60% Complete
- Force Main and Easement Maintenance (Easement survey and marking and initial clearing to the surveyed limits, where practical) – 50% Complete
- Corrosion Control – 100% Complete

3.1.4 Gravity Sewer System Operation and Maintenance Program (GSOMP)

The GSOMP was submitted to EPA and SCDHEC on November 20, 2015. The City received final approval of the GSOMP from EPA and SCDHEC on May 23, 2016.

The activities completed or in progress during the current reporting period are as follows:

- Evaluation of potential sulfide and corrosion control of the WCTS – 100% Complete
- Inspection and evaluation of crossings and stream bank encroachment areas with a higher likelihood of SSOs – 100% Complete
- Gravity Sewer Easement survey and marking and initial clearing to survey the limits, where practical – 20% Complete

3.1.5 Financial Analysis Program

The Financial Analysis Program (FAP) was submitted to EPA and SCDHEC on January 4, 2016. The City received final approval of the FAP from EPA and SCDHEC on May 23, 2016.

The activities completed or in progress during the current reporting period are as follows:

- O&M Costs Tracking by Type of Activity – 100% Complete

As of December 28, 2018, all implementation requirements associated with the FAP have been completed.

3.2 Continuing Sewer Assessment Program (CSAP) for the WCTS

The CSAP was submitted to EPA and SCDHEC on June 9, 2015. The City received final approval of the CSAP from EPA and SCDHEC on May 23, 2016.

The activities under the Major Components of the CSAP completed or in progress during the current reporting period are as follows:

- Major Gravity Sewer Video Inspection or Multi-Sensor Inspection – 87% Complete
- Major Pump Stations Condition Assessment – 87% Complete
- Major Force Mains Field Assessment – 87% Complete

The activities under the Minor Components of the CSAP completed or in progress during the current reporting period are as follows:

- Initial Minor Gravity Sewer and Manholes Desktop Condition Assessment/Prioritization – 100% Complete
- Minor Gravity Sewer and Manholes Condition Assessment – 43% Complete
- Minor Pump Stations Condition Assessment – 43% Complete
- Minor Force Mains Field Assessment – 43% Complete

3.3 Infrastructure Rehabilitation Report (IRR) for the WCTS

In accordance with Section V.16 of the CD, the City shall submit an Infrastructure Rehabilitation Report (IRR) summarizing the results of the CSAP of the major components of the WCTS and a description of proposed rehabilitation projects. The IRR is to be submitted within six months after the City has assessed the major components of the WCTS once pursuant to the CSAP. As rehabilitation projects are identified through the assessments described in Section 3.2 and in the normal course of operations and maintenance, the City is proceeding with design and construction of those projects. Completion percentages of projects currently in progress are as follows:

- SS725802 Greenlawn Dr. to Burnside #1 PS (Hampton Forest) Phase 2 – Design 98% Complete
- SS7261 Lake Katherine Sewer Line Capacity Enhancement – Construction 0% Complete
- SS7289 Rivermont Drive Pump Station and Force Main – Design 98% Complete
- SS7301 Bull Street – Construction in Progress; a completion percentage cannot be provided due to a varying scope of work and timeline for this project.
- SS7330 Upper Mill Creek Sewer Improvements – Design 40% Complete
- SS7331 Upper Kinley Creek Sewer Improvements Ph. 1 – Design 90% Complete
- SS733701 East Rocky Branch Improvements Ph. 1 – Design 95% Complete

- SS733702 East Rocky Branch Improvements Ph. 2 – Design 90% Complete
- SS735002 Crane Creek Upper North Branch Extension – Design 95% Complete
- SS735003 Crane Creek Lower North Branch Capacity Upgrade Phase 1 – Design 90% Complete
- SS7389 Crane Creek and Smith Branch Manhole Repair and Mitigation – Construction 35% Complete
- SS7428 Lower Saluda Relief Sewer and Major Pipe Rehabilitation – Design 25% Complete
- SS7450 Crane Creek Lower North Branch Capacity Upgrade Phase 2 – Design 1% Complete
- SS7454 Broad River Force Main Replacement and Gravity Sewer Capacity Improvements – Design 15% Complete
- SS7465 Lower Crane Creek Relief Sewer Phase 2 – Design 0% Complete
- SS7466 Lower Rocky Branch Relief Sewer Phase 1 – Design 5% Complete
- SS7467 North Columbia Pump Station Upgrade – Design 0% Complete
- SS7470 Lower Crane Creek Relief Sewer Phase 1 – Design 0% Complete

In accordance with Section V.16.c of the CD, the City shall submit a Supplemental Infrastructure Rehabilitation Report (SIRR) which shall update all portions of the IRR to reflect additional information developed by the City through completion of the CSAP of the minor components of the WCTS. The SIRR is to be submitted within six months after the City has assessed the remainder of the entire WCTS pursuant to the CSAP. As rehabilitation projects are identified through the assessments described in Section 3.2 and in the normal course of operations and maintenance, the City is proceeding with design and construction of those projects. Completion percentages of projects currently in progress are as follows:

- SS6786 Annual Sanitary Sewer Manhole Rehabilitation – 2019 Construction 25% Complete
- SS6857 Olympia Subdivision Sewer System Evaluation Survey (SSES) and Rehabilitation – Design 75% Complete
- SS6966 Annual Rehab on Lines less than 15" – 2019 Construction 0% Complete
- SS7172 Rehabilitation/Replacement Harbison #2, Mallard Point and Animal Shelter PS – Construction 20% Complete
- SS7208 Saluda River Basin SSES and Rehabilitation for SR-03, 10, & 12 – Construction 98% Complete
- SS7279 Smith Branch-02 SSES and Rehabilitation – Construction 99% Complete
- SS7280 Rocky Branch-01 SSES and Rehabilitation – Construction 98% Complete
- SS7323 Food Lion PS Improvements – Design 95% Complete
- SS7362 Smith Branch 01 SSES – Construction 44% Complete
- SS7363 Smith Branch 03 SSES – Construction 0% Complete
- SS7424 SSES and Sewer Rehabilitation Implementation BR02 – Design 10% Complete
- SS7425 SSES and Sewer Rehabilitation Implementation RB03 – Design 25% Complete
- SS7435 Wexford and Windsong Lift Stations Evaluation and Rehabilitation Project – Design 0% Complete
- SS7437 Miscellaneous Lift Station Improvements and Backup Power Addition Project – Design 0% Complete

- SS7462 Investigation of Crockett Road, Atlas Road and Versch Lock Lift Stations – Design 5% Complete
- SS7463 SSES and Sewer Rehabilitation Implementation CC01 – Design 6% Complete
- SS7464 SSES and Sewer Rehabilitation Implementation CC02 and CC04 – Design 6% Complete
- SS7468 Three Rivers Force Main Replacement – Design 0% Complete
- SS7478 Rocky Branch 01 SSES Phase 2 – Design 5% Complete
- SS7479 Smith Branch 02 SSES Phase 2 – Design 5% Complete

3.4 Supplemental Environmental Project

In accordance with Section VIII and Appendix I of the CD, the City will perform a Supplemental Environmental Project (SEP). Within three years of the effective date of the CD, the City was to submit to EPA preliminary reports on the condition of Rocky Branch, Smith Branch, and Gills Creek and plans for Phase II for each of the SEP watersheds. On March 24, 2016, the City submitted a supplemental report related to the October 4, 2015 *force majeure* event and requested an additional six months to November 21, 2017 to complete the submittal of the preliminary reports and plans for improving the SEP areas. This request was granted by EPA. The SEP Preliminary Report and Phase II plan for Rocky Branch, Smith Branch, and Gills Creek was submitted to EPA on June 14, 2017.

The activities completed or in progress during the current reporting period are as follows:

- As of December 31, 2018, construction is 95% complete for the MLK Detention Project, which will meet the SEP Phase II requirements for Rocky Branch. The project is substantially complete with punch list items remaining to be completed in the first quarter of 2019.
- The City and Gills Creek Watershed Association (GCWA) completed the volunteer debris/trash cleanup in the Gills Creek Watershed in October 2018 as anticipated.

Section 4 Quarterly SSO Report

In accordance with Section IX.39.a.(ii) of the CD, the City is to provide a list of all SSOs that occurred during the reporting period in a tabular format along with information on the date, time, location, source, duration, estimated volume, receiving water, cause, and actions taken to resolve the SSO.

Table 1 - SSO Report, 4th Quarter 2018

City of Columbia, SC Quarterly SSO Listing 4th Quarter 2018									
SSO Date	SSO Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
10/1/2018	13:45	1305 Murraywood Ct, Columbia, SC 29212	Cleanout	TBD		8		Roots	Removed Stoppage To Resume Normal Flow. Service/Main Line Repair.
10/3/2018	22:30	2972 S Partridge Cir, Hopkins, SC 29061	Manhole	TBD		1	Goose Branch Creek	Collapsed Line	Removed Stoppage To Resume Normal Flow. Placed On Preventive Maintenance For Main Line Washes.
10/11/2018	07:28	4645 Pine Grove Ct, Columbia, SC 29206	Manhole	TBD		8,100	Lake Katherine (Gills Creek)	Wet Weather	Wet Weather, Observation Only. Engineering Line Replacement Project In Design.
10/11/2018	07:45	1548 Kathwood Dr, Columbia, SC 29206	Manhole	TBD		56,400	Lake Katherine (Gills Creek)	Wet Weather	Wet Weather, Observation Only. Engineering In Design Phase Of Line.
10/11/2018	08:00	1721 W Buchanan Dr, Columbia, SC 29206	Manhole	TBD		2,813	Storm Drain To Penn Branch	Wet Weather	Wet Weather, Observation Only. Engineering In Design Phase Of Replacement.
10/11/2018	08:10	22 Thistle Ct, Irmo, SC 29063	Cleanout	TBD		1,320	Swygert Branch	Wet Weather	Wet Weather, Observation Only. Further Investigation To Be Conducted. Draw Down Test On Pumps.
10/11/2018	10:58	1400 Peeples St, Columbia, SC 29203	Manhole	TBD		3,975	Crane Creek	Wet Weather	Wet Weather, Observation Only. Being Evaluated, Line Recently Replaced.
10/11/2018	11:40	108 Northman Dr, Columbia, SC 29210	Cleanout	10/11/2018	12:00	40	Unnamed Tributary To Kinley Creek	Debris	Removed Stoppage To Resume Normal Flow. Washed Service Line 10 Feet To Remove Stoppage.
10/11/2018	11:20	4440 Bluff Rd, Columbia, SC 29209	Pump Station	10/11/2018	11:20	875	Tributary To Gills Creek	3rd Party Responsibility	Contractor Called To Maintain Station With Vacuum Truck Until Power Was Restored. Power Restored By Utility.
10/11/2018	13:40	1600 Garner Ln, Columbia, SC 29210	Manhole	10/11/2018	15:30	75		Wet Weather	Observed Low Point At Pump Station Due To Wet Weather. Pump Station Back To Running Normally.
10/11/2018	15:15	2111 Marley Dr, Columbia, SC 29210	Manhole	TBD		186		Wet Weather	Wet Weather, Evidence Of Spill. Further Investigation Needed.
10/11/2018	15:00	2108 Sapling Dr, Columbia, SC 29210	Manhole	10/11/2018	14:45	478		Roots	Washed Main Line 300 Feet And Removed Stoppage. Main Line Repair.
10/15/2018	13:20	5418 Mauldin Ave, Columbia, SC 29203	Manhole	10/23/2018	TBD	346	Unknown Tributary To Smith Branch	Debris	Washed Main Line 650 Feet To Remove Stoppage. Blockage Was A Piece Of Debris In Line. Main Line Repair To Address Multiple Offset Joints Found During CCTV.
10/16/2018	15:10	501 Club House Rd, Columbia, SC 29203	Manhole	TBD		5,673	Tributary To Crane Creek	Collapsed Line	Bypass Setup To Stop Overflow. Main Line Repair.
10/17/2018	09:30	696 Rawl St, Columbia, SC 29203	Manhole	TBD		30	Storm Drain	Collapsed Line	Washed Main Line 100 Feet, Removed Stoppage. Main Line Repair.
10/18/2018	10:15	110 Holborn Ct, Columbia, SC 29210	Cleanout	10/19/2018	14:04	65		Collapsed Line	Removed Stoppage To Resume Normal Flow. Service Line Repair.
10/19/2018	11:00	1927 Cedarbrook Dr, Columbia, SC 29212	Cleanout	10/19/2018	11:30	90	Storm Ditch	Roots	Removed Stoppage To Resume Normal Flow. Washed Service Line 40 Feet, Removed Roots.
10/19/2018	11:15	1001 Idlewilde Blvd, Columbia, SC 29201	Cleanout	10/22/2018	12:29	45	Storm Drain	Collapsed Line	Removed Stoppage To Resume Normal Flow. Service Line Cleanout Repair.
10/19/2018	14:00	920 Gervais St, Columbia, SC 29201	Cleanout	10/19/2018	14:15	45	Storm Drain	Debris	Removed Stoppage To Resume Normal Flow. Washed Service Line 50 Feet, Removed Stoppage.
10/20/2018	16:40	4412 Palmetto Ave, Columbia, SC 29203	Manhole	TBD		15		Collapsed Line	Removed Stoppage To Resume Normal Flow. Main Line Repair.

City of Columbia, SC Quarterly SSO Listing 4th Quarter 2018									
SSO Date	SSO Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
10/20/2018	11:50	2139 Porter Dr, Columbia, SC 29209	Cleanout	10/20/2018	13:00	30		Roots	Removed Stoppage To Resume Normal Flow. Washed Service Line 34 Feet To Remove Roots.
10/21/2018	07:50	208 Pointer Dr, Hopkins, SC 29061	Manhole	TBD		210		Roots	Removed Stoppage To Resume Normal Flow. Main Line Root Cut.
10/24/2018	14:26	3900 Bentley Dr, Columbia, SC 29210	Other	10/24/2018	15:00	1,897	Unnamed Tributary To Broad River	3rd Party Responsibility	Removed Tree From Bypass Hose, Placed Discharge Hose Back Into The Manhole. Line Replacement Project In Design.
10/24/2018	19:05	921 Fuller Ave, Columbia, SC 29203	Cleanout	10/25/2018	TBD	58		Collapsed Line	Washed 20 Feet From City Cleanout. Service Line Cleanout Repair.
10/25/2018	09:30	934 W Confederate Ave, Columbia, SC 29201	Manhole	10/25/2018	12:00	11		Debris	Manhole Receded On Its Own. Washed Main Line.
10/29/2018	08:00	1001 Idlewilde Blvd, Columbia, SC 29201	Cleanout	10/29/2018	08:21	42	Storm Drain	Debris	Removed Stoppage To Resume Normal Flow. Washed Service Line 20 Feet To Remove Stoppage.
11/5/2018	18:00	2340 Shop Rd, Columbia, SC 29201	Cleanout	11/5/2018	18:45	7		Collapsed Line	Removed Stoppage To Resume Normal Flow. Washed Service Line 100 Feet To Clean Debris Out Of Belly.
11/6/2018	21:00	2324 Exton Shore Dr, Columbia, SC 29209	Cleanout	TBD		30		Debris	Removed Stoppage To Resume Normal Flow. Remove Roots From City Clean Out.
11/6/2018	07:00	1200 Simmon Tree Lane, Columbia, SC 29201	Other	TBD		80		Treatment Plant	Operations Knocked Down Foam Around Seal With A Pole. Sludge Was Removed Via Vac Truck. Area Was Limed, Spill Was Intermittent For 12 Hrs. Operations Is Consulting With Engineer Reviewing All The Mechanical Equipment And Reviewing Digester Operations.
11/12/2018	00:18	1721 W Buchanan Dr, Columbia, SC 29206	Manhole	TBD		1,500	Storm Drain To Penn Branch	Wet Weather	Wet Weather, Observation Only. Engineering Is In The Design Phase Of Replacement.
11/12/2018	07:00	1200 Simmon Tree Lane, Columbia, SC 29201	Other	11/12/2018	04:45	6		Treatment Plant	Shut Down Feed To Digester, Transferred Sludge To #5 Digester. Knocked Down Foam With A Pole, Area Was Limed. Operations Is Consulting With Engineer Reviewing All The Mechanical Equipment And Reviewing Digester Operations.
11/12/2018	23:15	1548 Kathwood Dr, Columbia, SC 29206	Manhole	TBD		40,625	Lake Katherine (Gills Creek)	Wet Weather	Wet Weather, Observation Only. Engineering Is In The Design Phase For Reconstructing Main Line.
11/12/2018	23:35	4645 Pine Grove Ct, Columbia, SC 29206	Manhole	TBD		15,000	Lake Katherine (Gills Creek)	Wet Weather	Wet Weather, Observation Only. Engineering In Design Phase Of Line.
11/13/2018	10:00	1108 Javelin Ct, Columbia, SC 29212	Cleanout	11/13/2018	10:20	80	Storm Drain	Debris	Removed Stoppage To Resume Normal Flow. Washed Service Line 40 Feet To Remove Stoppage.
11/13/2018	16:58	7625 Garners Ferry Rd, Columbia, SC 29209	Manhole	11/13/2018	19:07	645	Reeder Point Branch	Debris	Removed Stoppage To Resume Normal Flow. Washed Main Line 768 Feet To Remove Stoppage.
11/13/2018	08:40	1200 Simmon Tree Lane, Columbia, SC 29201	Manhole	11/13/2018	TBD	600		Wet Weather	Treatment Plant Started A Second Screw To Pump Down Influent Wet Well.
11/14/2018	09:00	1901 Lorick Ave, Columbia, SC 29203	Manhole	11/14/2018	09:40	280	Tributary To Smith Branch	Debris	Removed Stoppage To Resume Normal Flow. Washed Main Line 275 Feet, Stoppage Removed.
11/14/2018	19:44	6 Village Ct, Columbia, SC 29209	Cleanout	11/15/2018	08:00	2		Debris	Washed From City Clean Out 4 Feet To Remove Blockage. Drained The Clean Out And Service Line. Removed Broken Clean Out Cap From Line.
11/15/2018	07:31	1621 Stevenson Ave, Columbia, SC 29203	Cleanout	TBD		523	Storm Drain	Wet Weather	Wet Weather, Observation Only. Investigation To Be Conducted.
11/15/2018	09:00	22 Thistle Ct, Irmo, SC 29063	Cleanout	TBD		375	Swygert Branch	Wet Weather	Wet Weather, Observation Only. Investigation To Be Conducted.

City of Columbia, SC Quarterly SSO Listing 4th Quarter 2018									
SSO Date	SSO Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
11/15/2018	11:00	244 Pineneedle Rd, Columbia, SC 29203	Manhole	TBD		180	Smith Branch	Roots	Washed Main Line 100 Feet To Remove Stoppage. Main Line Root Cut.
11/15/2018	09:40	3216 Montcrest Rd, Columbia, SC 29210	Cleanout	TBD		500		Wet Weather	Wet Weather; Observation Only. Investigation To Be Conducted.
11/16/2018	09:30	1200 Simmon Tree Lane, Columbia, SC 29201	Other	11/17/2018	08:00	2,250,000 *	Congaree River	Collapsed Line	Increased Flow Through Plant, Brought All Usable Treatment Basins Online, Built Earthen Isolation Dam, And Isolated Storm Water Ditch. Determine If Alternative Engineering Options May Exist. Utilized 3 Bypass Pumps To Recollect Spill As Capacity Became Available In EQ.
11/27/2018	20:10	400 Columbiana Dr, Columbia, SC 29212	Cleanout	11/30/2018	14:00	582	Storm Drain	3rd Party Responsibility	Washed Main Line 300 Ft To Remove Stoppage And Resume Normal Flow. Service Line Repair At Main Line.
11/29/2018	15:20	2501 Read St, Apt 12, Columbia, SC 29204	Cleanout	11/29/2018	15:45	41		Debris	Removed Stoppage To Resume Normal Flow. Washed Service Line 35 Feet To Remove Stoppage.
11/29/2018	09:30	400 Columbiana Dr, Columbia, SC 29212	Cleanout	11/29/2018	14:45	1,260	Storm Drain	Debris	Removed Stoppage To Resume Normal Flow. Washed Main Line 400 Feet To Remove Stoppage. 2-Liter Bottle That Caused Stoppage Was Removed From The Line.
11/30/2018	09:00	1200 Simmon Tree Lane, Columbia, SC 29201	Other	11/30/2018	09:00	5		Treatment Plant	Sludge Was Transferred From Digester #3 To Digester #5. Used Hoses And Squeegees To Recover Sludge From Atop Digester. Operations Is Consulting With Engineer Reviewing All The Mechanical Equipment And Reviewing Digester Operations.
12/4/2018	20:03	922 Woodland Dr, Columbia, SC 29205	Manhole	12/4/2018	20:23	130		Roots	Removed Stoppage To Resume Normal Flow. Washed Main Line To Remove Roots.
12/4/2018	13:40	2220 Shop Rd, Columbia, SC 29201	Manhole	TBD		480	Storm Drain	Roots	Washed Main Line 400 Feet, Removed Stoppage. Main Line Repair.
12/4/2018	21:00	2017 Robin Rd, Columbia, SC 29204	Cleanout	12/4/2018	21:20	4		Debris	Removed Stoppage To Resume Normal Flow. Washed Service Line 50 Feet From City Cleanout.
12/5/2018	14:05	4464 Devine St, Columbia, SC 29205	Other	12/5/2018	14:20	268	Gills Creek	Equipment Failure	Resecured Clamp On Layflat Hose. Added Duct Tape To Prevent Clamp From Coming Loose.
12/6/2018	11:35	112 Silo Ct, Columbia, SC 29201	Manhole	TBD		450	Storm Drain	Roots	Removed Stoppage To Resume Normal Flow. Main Line Root Cut.
12/7/2018	18:20	516 Meadowlake Dr, Columbia, SC 29203	Manhole	TBD		168	Tributary To Crane Creek	Collapsed Line	Removed Stoppage To Resume Normal Flow. Main Line Repair.
12/9/2018	13:30	34 Carriage Trace Ct, Columbia, SC 29212	Manhole	TBD		4,500	Stoop Creek	Roots	Washed Main Line To Remove Stoppage And Resume Normal Flow. Emergency Main Line Repair.
12/9/2018	14:53	22 Thistle Ct, Irmo, SC 29063	Cleanout	TBD		243	Swygert Branch	Wet Weather	Wet Weather; Observation Only. Engineers In Design Phase.
12/9/2018	16:30	1011 Darlington St, Columbia, SC 29201	Manhole	TBD		10,500	Storm Drain	Collapsed Line	Set Up Bypass. Main Line Repair.
12/12/2018	17:15	1013 Rockyknoll Dr, Columbia, SC 29203	Manhole	12/13/2018	00:18	16,839	Tributary To Crane Creek	Roots	Set Up Bypass Pump To Prevent Further Spill. Main Line Repairs.
12/13/2018	12:30	6164 Saint Andrews Rd, Columbia, SC 29212	Cleanout	TBD		561		Roots	Washed Main Line To Remove Stoppage And Resume Normal Flow. Main Line Repair.
12/14/2018	10:10	501 Club House Rd, Columbia, SC 29203	Manhole	12/18/2018	TBD	1,200		Roots	Washed Main Line To Remove Stoppage And Resume Normal Flow. Main Line Root Cut.
12/17/2018	16:15	9539 Farrow Rd, Columbia, SC 29203	Cleanout	12/17/2018	16:30	468	Crane Creek	Grease	Washed Service Line 50 Feet. Service Line Washed, Removed Stoppage.
12/18/2018	11:00	916 Swan Ln, Columbia, SC 29203	Cleanout	12/20/2018	07:45	60	Tributary To Crane Creek	Collapsed Line	Washed Service Line 30 Feet. Service Line Repair.
12/21/2018	16:40	1024 Elmwood Ave, Columbia, SC 29201	Manhole	12/21/2018	17:45	390	Storm Drain	Grease	Removed Stoppage To Resume Normal Flow. Washed Main Line 120 Feet To Remove Stoppage.

* Partially treated.

City of Columbia, SC Quarterly SSO Listing 4th Quarter 2018									
SSO Date	SSO Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
12/24/2018	17:00	74 Dinwood Cir, Columbia, SC 29204	Cleanout	12/24/2018	17:20	20		Debris	The Service Line Was Washed 40 Ft To Resume Normal Flow.
12/25/2018	11:30	151 Myers Creek Dr, Hopkins, SC 29061	Cleanout	12/26/2018	TBD	40		Debris	Washed Service Line 25 Feet And Removed Stoppage. Service Line Repair.
12/25/2018	14:00	1128 Slash Pine Ln, Columbia, SC 29203	Cleanout	12/25/2018	14:15	15		Debris	The Service Line Was Washed 10 Ft To Resume Normal Flow.
12/26/2018	10:45	1726 Hampton St, Columbia, SC 29201	Cleanout	12/26/2018	11:00	40		Debris	Washed Service Line 45 Feet And Removed Stoppage.
12/27/2018	15:40	1745 Shivers Rd, Columbia, SC 29210	Manhole	12/31/2018	14:35	175	Drainage Ditch	Collapsed Line	Washed Main Line 50 Feet And Removed Stoppage. Main Line Repair.
12/29/2018	00:44	1955 Rolling Hills Rd, Columbia, SC 29210	Cleanout	TBD		1,745		Collapsed Line	Washed Main Line 300 Feet. Line Will Be Added To Preventative Maintenance Wash List.
12/30/2018	10:47	22 Thistle Ct, Irmo, SC 29063	Cleanout	12/30/2018	11:17	62		Wet Weather	Wet Weather, Observation Only. Investigation To Be Conducted.

As noted in Section IV.8.a of the CD, a Building Backup is defined as a release of wastewater into a building or onto private property that is caused by blockages, flow conditions, or other malfunctions in the WCTS.

No building backups were identified within the City’s system for the current reporting period.

Section 5 SEP Water Quality Monitoring Results

In accordance with Section IX.39.a.(v) of the CD, the following section provides a summary of the results of water quality monitoring conducted during the previous calendar quarter as part of the Supplemental Environmental Project (SEP) described in Appendix I of the CD.

5.1 Sampling Conducted and Results

As a part of the SEP requirements established in Section VIII and Appendix I of the CD, the City is to conduct water quality monitoring at three locations to assist in evaluation of the environmental benefits of the SEP in improving water quality in Smith Branch and Gill's Creek. The City is to implement a program for ambient monitoring of dissolved oxygen (DO), total suspended solids (TSS), temperature, and E. coli at the following monitoring sites:

- Gill's Creek at Garner's Ferry Road
- Smith Branch at North Main Street
- Gill's Creek at Bluff Road

In accordance with the requirements of the CD, the City was to submit a Quality Assurance Project Plan (QAPP) to SCDHEC within 60 days of the date of entry of the CD. The City originally submitted the QAPP to SCDHEC on July 18, 2014 in advance of the deliverable deadline. The City subsequently received comments from SCDHEC and resubmitted the QAPP to SCDHEC on January 13, 2015. The City received final approval of the QAPP from EPA and SCDHEC on January 15, 2016. The QAPP was revised and resubmitted to SCDHEC on May 31, 2017 and on December 19, 2018 to reflect changes in City personnel. The City will monitor quarterly for the first three years under the CD and monthly (or every other month at the Gills Creek at Bluff Road site) from years four through six under the CD.

Water quality monitoring for 2018 Q4 was completed on October 29, 2018. Monitoring results are provided below for the following samples:

- C-001: Gill's Creek at Garner's Ferry Road
- B-280: Smith Branch at North Main Street
- C-017: Gill's Creek at Bluff Road

City of Columbia Quality Assurance Project Plan (QAPP) Data

Verification and Validation Form

City of Columbia Supplemental Environmental Projects QAPP

November 2015, Revised May 2017, Pending Revision November 2018

Laboratory Report Date: 10/29/2018

The undersigned verifies the data in the above referenced report, per the QAPP requirements.



Miranda Chestnut/QA Manager

11/12/2018

Date

The undersigned validates the data in the above referenced report, per the QAPP requirements.



Alfred Jessee/Project Validator

11/12/2018

Date



Report of Analysis

Lab ID #: 15142-001

Project: WATER QUALITY MONITORING

Sample Name: C-017 Bluff

Client ID #:

Matrix: Waste Water

Collected: 10/22/2018 @ 11:40

Collected by: RC

Date Received: 10/22/2018 @ 12:47

Parameter	Result	Reporting Limit	Units	Method Reference	Data Flag	Date/Time of Analysis	Analyst
DO	7.40	None	mg/L	SM 4500-O G-2011		10/22/2018 11:40	RC
E. Coli (MPN)	139.6	1	MPN	SM 9223 B-2004		10/22/2018 15:21	MML
Temperature	15.9	None	oC	SM 2550B-2010		10/22/2018 11:40	RC
TSS	2.3	1	mg/L	SM 2540 D-2011		10/25/2018 8:45	RDA



Report of Analysis

Lab ID #: 15142-002

Project: WATER QUALITY MONITORING

Sample Name: C-001 GF

Client ID #:

Matrix: Waste Water

Collected: 10/22/2018 @ 11:10

Collected by: RC

Date Received: 10/22/2018 @ 12:47

Parameter	Result	Reporting Limit	Units	Method Reference	Data Flag	Date/Time of Analysis	Analyst
DO	8.93	None	mg/L	SM 4500-O G-2011		10/22/2018 11:10	RC
E. Coli (MPN)	248.9	1	MPN	SM 9223 B-2004		10/22/2018 15:21	MML
Temperature	17.3	None	oC	SM 2550B-2010		10/22/2018 11:10	RC
TSS	8.0	1	mg/L	SM 2540 D-2011		10/25/2018 8:45	RDA



Report of Analysis

Lab ID #: 15142-003

Project: WATER QUALITY MONITORING

Sample Name: B-280 Earlwood

Client ID #:

Matrix: Waste Water

Collected: 10/22/2018 @ 10:40

Collected by: RC

Date Received: 10/22/2018 @ 12:47

Parameter	Result	Reporting Limit	Units	Method Reference	Data Flag	Date/Time of Analysis	Analyst
DO	9.30	None	mg/L	SM 4500-O G-2011		10/22/2018 10:40	RC
E. Coli (MPN)	1413.6	1	MPN	SM 9223 B-2004		10/22/2018 15:21	MML
Temperature	14.2	None	oC	SM 2550B-2010		10/22/2018 10:40	RC
TSS	4.3	1	mg/L	SM 2540 D-2011		10/25/2018 8:45	RDA



Laboratory Endorsement / Definitions

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency, Standard Methods or other recognized agencies.

Common abbreviations that may be utilized in this report:

ND	Indicates the result was Not Detected at the specified reporting limit
"<"	Indicated the result as less than the indicated amount
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous to Count
SUB	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DF	Dilution Factor
RL	Reporting Limit
MDL	Calculated minimum detection limit
PQL	Practical Quantitation Limit
RE	Re-analysis

Reporting flags that may be utilized in this report:

J	Indicates the result is between the MDL and PQL and considered to be an estimated result
MB	Indicates the analyte was detected in the associated Method Blank
H	Indicates the recommended holding time was exceeded
*	Indicates a non-compliant or not applicable QC recovery or RPD
A	BOD or CBOD GGA check value for this sample did not meet acceptance criteria.
B	BOD or CBOD blank depletion did not meet acceptance criteria.
C	Indicates the spike % recovery was not acceptable.
D	Indicates the duplicate % difference was not acceptable.
E	Toxicity is apparent in the sample.

Sample receipt at Access Analytical is documented through the attached chain of custody. In accordance with laboratory protocol, this report shall be reproduced only in full and with the written permission of Access Analytical, Inc.. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the attached report and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.



ACCESS
ANALYTICAL, INC.

Sample Receipt

Were samples received on ice?	YES
Were samples received within required temperature limits?	YES
Are the number of samples the same as stated on the chain of custody?	YES
Are samples submitted with a correct and complete chain of custody?	YES
Are bottle caps tight and securely in place, coolers and samples intact?	YES
Are the correct sample containers provided?	YES
Were samples within the holding time for requested test(s)?	YES
Is the volume of sample submitted sufficient for the requested test(s)?	YES
Is there sufficient air space in bottle for bacteriological analysis?	YES
Were samples received with applicable preservative?	YES

