

Clean Water 2020 Program

CONSENT DECREE QUARTERLY REPORT

April 1, 2019 – June 30, 2019

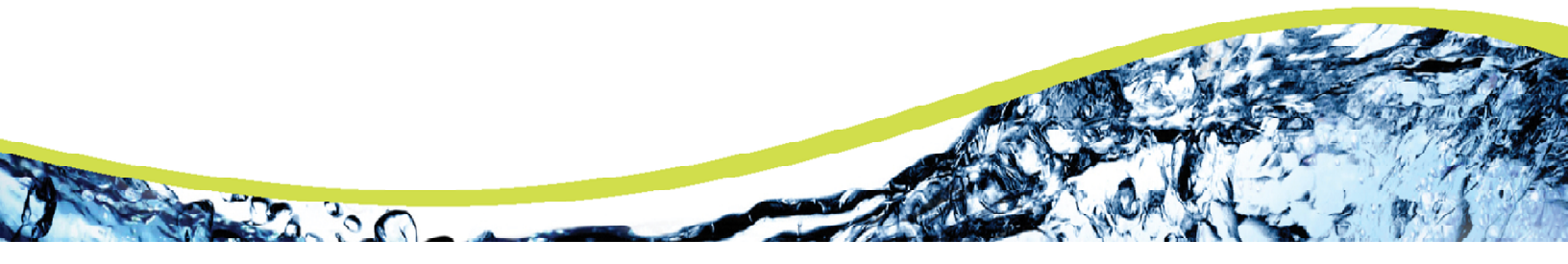


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Section 1 Introduction

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.

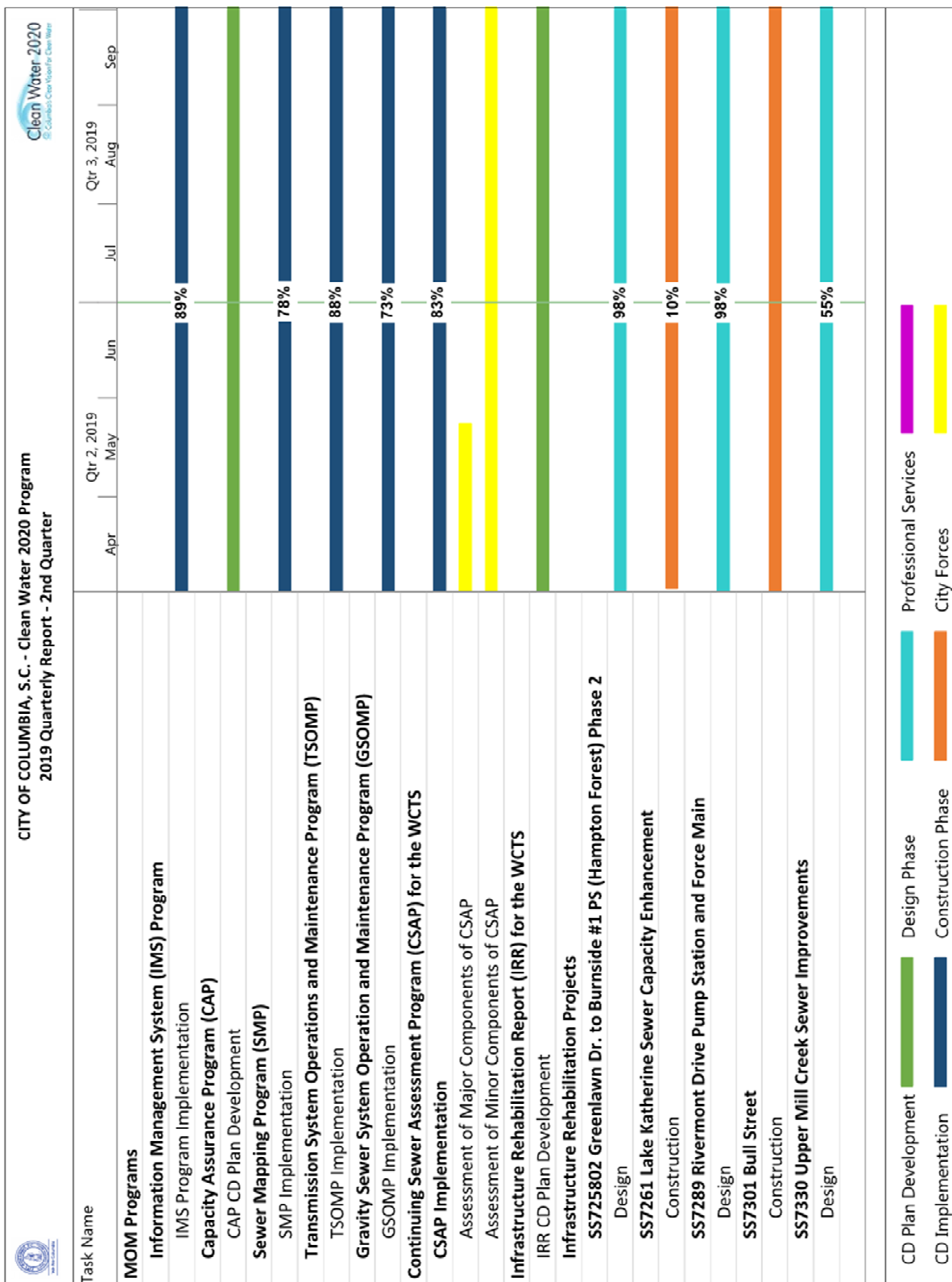
Section 4 – Quarterly SSO Report

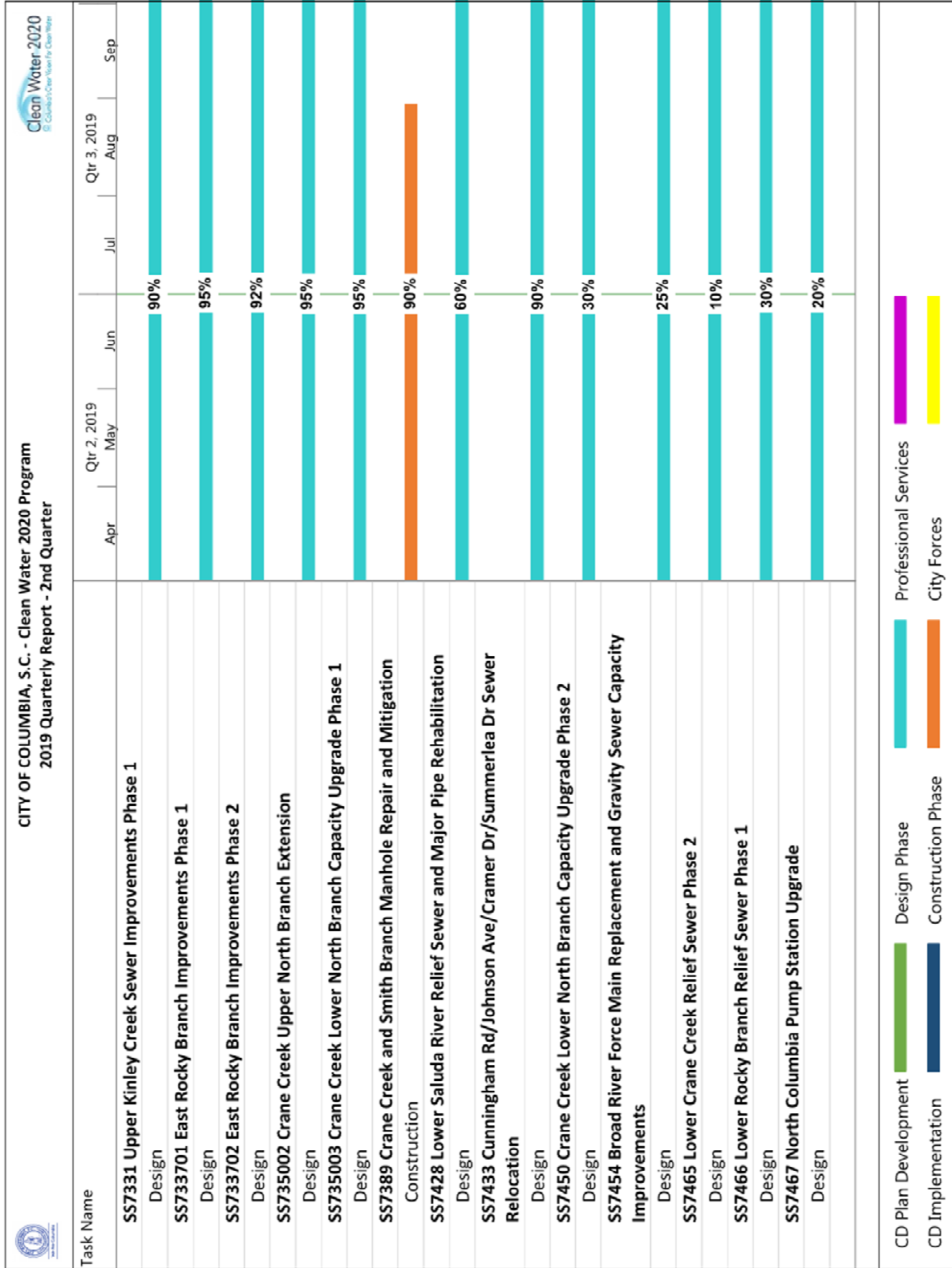
This section addresses the requirements of Section IX.39.a.(ii) of the Consent Decree and provides a tabular listing of sanitary sewer overflows (SSOs). The table includes the date, time, location, source, duration, estimated volume, receiving water (if any), cause, and actions taken to repair or otherwise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

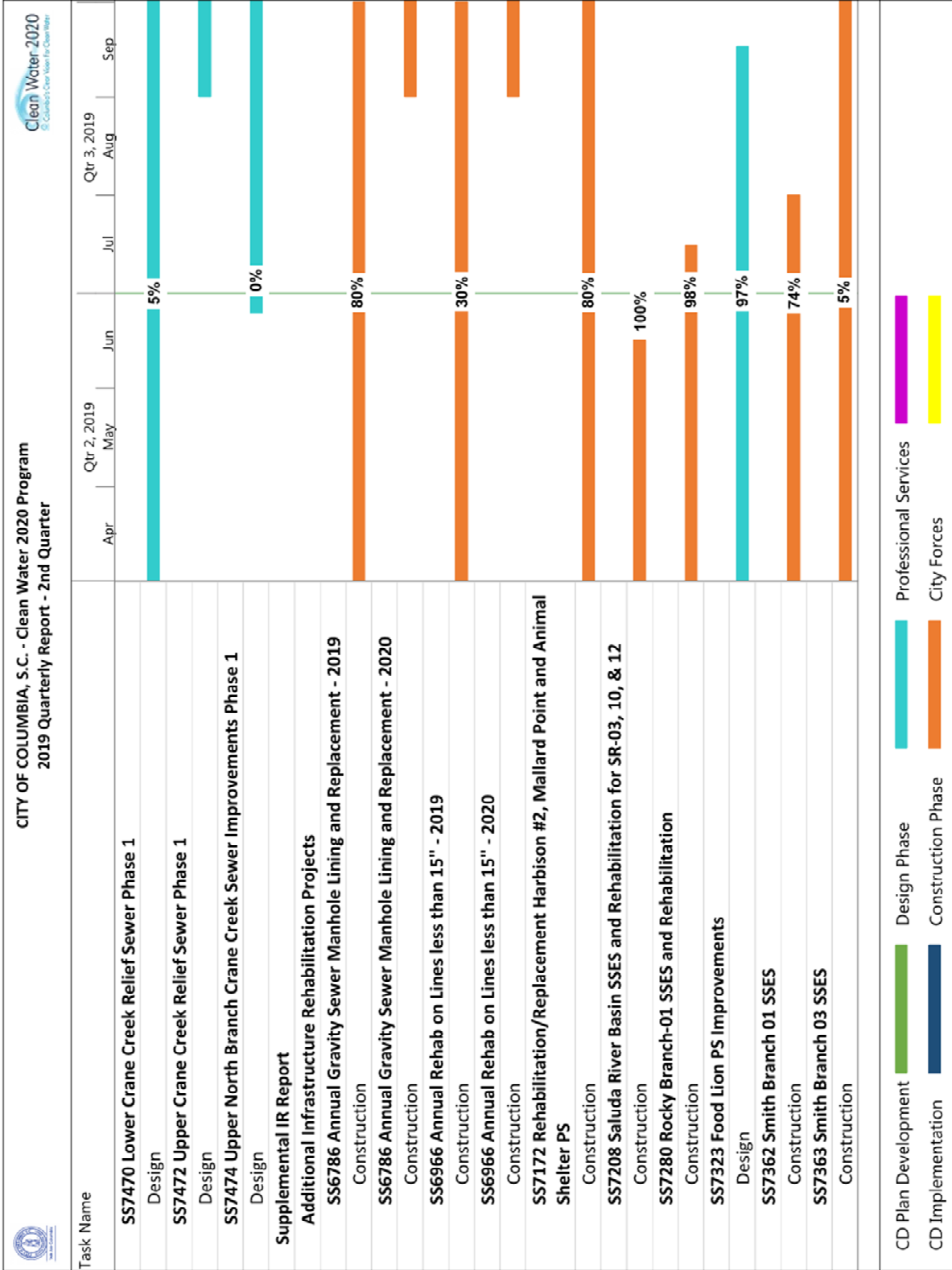
Section 5 – SEP Water Quality Monitoring Results

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







Task Name	CITY OF COLUMBIA, S.C. - Clean Water 2020 Program 2019 Quarterly Report - 2nd Quarter												
	Apr	May	Jun	Jul	Aug	Sep	Qtr 3, 2019						
SS7424 SSES and Sewer Rehabilitation Implementation BR02 Design													25%
SS7425 SSES and Sewer Rehabilitation Implementation RB03 Design													30%
SS7435 Wexford and Windsong Lift Stations Evaluation and Rehabilitation Project													20%
SS7437 Miscellaneous Lift Station Improvements and Backup Power Addition Project													25%
SS7462 Investigation of Crockett Road, Atlas Road and Versch Lock Lift Stations													5%
SS7463 SSES and Sewer Rehabilitation Implementation CC01 Design													20%
SS7464 SSES and Sewer Rehabilitation Implementation CC02 and CC04 Design													20%
SS7468 Three Rivers Force Main Replacement Design													1%
SS7478 RB01 SSES - Phase 2 Design													20%
SS7479 SB02 SSES - Phase 2 Design													20%
Sewer System Hydraulic Model Model Report Development													

CD Plan Development		Design Phase		Professional Services	
CD Implementation		Construction Phase		City Forces	

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 – 88% complete
 - Saluda River Basin – 89% 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

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 – 90% Complete
- Force Main and Easement Maintenance (Easement survey and marking and initial clearing to the surveyed limits, where practical) – 70% 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:

- Gravity Sewer Easement survey and marking and initial clearing to survey the limits, where practical – 20% Complete
- The revised GSOMP was resubmitted to EPA and SCDHEC on May 8, 2019.

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 CSAP was revised and resubmitted to EPA and SCDHEC on October 3, 2018. The City received approval of the revised CSAP from EPA and SCDHEC on February 6, 2019.

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 – 100% Complete
- Major Pump Stations Condition Assessment – 100% Complete
- Major Force Mains Field Assessment – 100% Complete

As of May 23, 2019, all activities under the Major Components of the CSAP have been completed.

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

- Minor Gravity Sewer and Manholes Condition Assessment – 52% Complete

- Minor Pump Stations Condition Assessment – 52% Complete
- Minor Force Mains Field Assessment – 52% 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 Capacity Enhancement – Construction 10% 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 55% Complete
- SS7331 Upper Kinley Creek Sewer Improvements Phase 1 – Design 90% Complete
- SS733701 East Rocky Branch Improvements Phase 1 – Design 95% Complete
- SS733702 East Rocky Branch Improvements Phase 2 – Design 92% Complete
- SS735002 Crane Creek Upper North Branch Extension – Design 95% Complete
- SS735003 Crane Creek Lower North Branch Capacity Upgrade Phase 1 – Design 95% Complete
- SS7389 Crane Creek and Smith Branch Manhole Repair and Mitigation – Construction 90% Complete
- SS7428 Lower Saluda River Relief Sewer and Major Pipe Rehabilitation – Design 60% Complete
- SS7433 Cunningham Rd/Johnson Ave/Cramer Dr/Summerlea Dr Sewer Relocation – Design 90% Complete
- SS7450 Crane Creek Lower North Branch Capacity Upgrade Phase 2 – Design 30% Complete
- SS7454 Broad River Force Main Replacement and Gravity Sewer Capacity Improvements – Design 25% Complete
- SS7465 Lower Crane Creek Relief Sewer Phase 2 – Design 10% Complete
- SS7466 Lower Rocky Branch Relief Sewer Phase 1 – Design 30% Complete
- SS7467 North Columbia Pump Station Upgrade – Design 20% Complete
- SS7470 Lower Crane Creek Relief Sewer Phase 1 – Design 5% Complete
- SS7472 Upper Crane Creek Relief Sewer Phase 1 – Design 0% Complete
- SS7474 Upper North Branch Crane Creek Sewer Improvements 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 Gravity Sewer Manhole Lining and Replacement – 2019 Construction 80% Complete, 2020 Construction 0% Complete
- SS6857 Olympia Subdivision Sewer System Evaluation Survey (SSES) and Rehabilitation – Project has been cancelled due to poor performance of consultant. Scope of work will be included in a future project.
- SS6966 Annual Rehab on Lines less than 15" – 2019 Construction 30% Complete, 2020 Construction 0% Complete
- SS7172 Rehabilitation/Replacement Harbison #2, Mallard Point and Animal Shelter PS – Construction 80% Complete
- SS7208 Saluda River Basin SSES and Rehabilitation for SR-03, 10, & 12 – Construction 100% Complete
- SS7280 Rocky Branch-01 SSES and Rehabilitation – Construction 98% Complete
- SS7323 Food Lion PS Improvements – Design 97% Complete
- SS7362 Smith Branch 01 SSES – Construction 74% Complete
- SS7363 Smith Branch 03 SSES – Construction 5% Complete
- SS7424 SSES and Sewer Rehabilitation Implementation BR02 – Design 25% Complete
- SS7425 SSES and Sewer Rehabilitation Implementation RB03 – Design 30% Complete
- SS7435 Wexford and Windsong Lift Stations Evaluation and Rehabilitation Project – Design 20% Complete
- SS7437 Miscellaneous Lift Station Improvements and Backup Power Addition Project – Design 25% Complete
- SS7462 Investigation of Crockett Road, Atlas Road and Versch Lock Lift Stations – Design 5% Complete
- SS7463 SSES and Sewer Rehabilitation Implementation CC01 – Design 20% Complete
- SS7464 SSES and Sewer Rehabilitation Implementation CC02 and CC04 – Design 20% Complete
- SS7468 Three Rivers Force Main Replacement – Design 1% Complete
- SS7478 Rocky Branch 01 SSES Phase 2 – Design 20% Complete
- SS7479 Smith Branch 02 SSES Phase 2 – Design 20% 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:

- The SEP Completion Report was submitted to USDOJ and EPA on June 19, 2019.

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, 2nd Quarter 2019

City of Columbia, SC Quarterly SSO Listing 2nd Quarter 2019									
SSO Date	SSO Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
4/1/2019	17:00	1024 Greenridge Ln, Columbia, SC 29210	Cleanout	4/1/2019	17:00	22	Storm Drain	Equipment Failure	Washed Service Line From City Cleanout. Service Line Wash To Remove Blockage.
4/2/2019	15:04	212 Bosworth Field Ct, Columbia, SC 29212	Cleanout	TBD		60	Drainage Ditch	Collapsed Line	Washed Main Line 175 Feet. Main Line Repair.
4/4/2019	09:00	1200 Simmon Tree Lane, Columbia, SC 29201	Other	TBD		13		Treatment Plant	Knocked Down Foam On Top Of Digesters To Stop Immediate Spill Followed By Applying 1 Gallon Neat Defoamer To Each Digester. Transferred Sludge From Digesters 3 & 4 To 5. Consulting With Engineers To Determine Cause Of Foaming.
4/4/2019	16:00	4618 Ryan Ave, Columbia, SC 29203	Cleanout	TBD		6		Roots	Washed Service Line 15 Feet From City Cleanout.
4/5/2019	17:45	6711 Wingard St, Columbia, SC 29209	Cleanout	4/12/2019	TBD	24		Roots	Washed Service Line 10 Feet From City Cleanout. Service Line Repair.
4/8/2019	11:49	216 Glenshire Dr, Columbia, SC 29203	Other	4/10/2019	TBD	10		Collapsed Line	Collapsed Service Line. Spill Stopped Without Intervention By Staff. Service Line Repair.
4/9/2019	16:28	1200 Simmon Tree Lane, Columbia, SC 29201	Other	TBD		8		Treatment Plant	Knocked Down Foam On Top Of Digesters To Stop Immediate Spill Followed By Applying 1 Gallon Neat Defoamer To Each Digester. Transferred Sludge From Digesters 3 & 4 To 5. Consulting With Engineers To Determine Cause Of Foaming.
4/9/2019	19:40	512 Old Friars Rd, Columbia, SC 29210	Cleanout	4/11/2019	TBD	15		Debris	Removed Stoppage To Resume Normal Flow. Emergency Service Line Repair.
4/9/2019	12:40	217 Crestmore Dr, Columbia, SC 29209	Manhole	4/9/2019	13:00	120		Debris	Washed Main Line 400 Feet To Remove Stoppage.
4/10/2019	20:00	2806 School House Rd, Columbia, SC 29204	Cleanout	4/10/2019	20:00	27	Storm Drain	Debris	Washed Service Line 20 Feet To Remove Stoppage.
4/9/2019	22:40	204 Kemsing Rd, Columbia, SC 29212	Cleanout	4/9/2019	23:00	18		Debris	Removed Stoppage To Resume Normal Flow. Removed Broken Cleanout Cap Pieces From Service Line.
4/11/2019	16:00	319 Saluda River Rd, Columbia, SC 29210	Manhole	TBD		100	Storm Drain To Saluda River	Roots	Washed Main Line To Remove Stoppage And Resume Normal Flow. Main Line Repair.
4/11/2019	12:30	202 Summerlea Dr, Columbia, SC 29203	Cleanout	4/12/2019	08:00	140	Tributary To Smith Branch	Collapsed Line	Washed Service Line 15 Feet To Remove Stoppage. Emergency Service Line Repair.
4/14/2019	09:00	1200 Simmon Tree Lane, Columbia, SC 29201	Other	TBD		1		Treatment Plant	Knocked Down Foam With PVC Pipe And Applied 0.5 Gal Defoamer. Consulting With Engineers To Determine Cause Of Foaming.
4/16/2019	15:15	135 Tram Rd, Columbia, SC 29210	Cleanout	4/16/2019	15:30	30		Collapsed Line	Washed Service Line 60 Feet From City Cleanout. Service Line Wash To Remove Stoppage.
4/22/2019	22:20	1236 Pineland Dr, Columbia, SC 29203	Manhole	4/22/2019	22:45	100	Storm Water Ditch	Debris	Washed Main Line And Removed Debris From Manhole. Main Line Wash And Vacuumed Debris From Manhole.
4/24/2019	12:30	2025 Atlas Rd, Columbia, SC 29209	Cleanout	4/24/2019	12:30	12		Debris	Washed Service Line 50 Feet To Remove Blockage.
4/28/2019	12:56	16 Apple Valley Ct, Columbia, SC 29210	Cleanout	4/28/2019	13:30	180		Grease	Washed Service Line To Remove Stoppage And Resume Normal Flow. Washed Service Line 30 Feet.
4/29/2019	10:40	16 Apple Valley Ct, Columbia, SC 29210	Cleanout	4/29/2019	10:40	50		Debris	Washed City Service Line Cleanout 45 Feet. Washed Service Line 45 Feet To Remove Blockage.
5/2/2019	11:50	100 E Exchange Blvd, Columbia, SC 29209	Manhole	TBD		200	Storm Drain	Roots	Washed Main Line 300 Ft To Remove Stoppage And Resume Normal Flow. Main Line Root Cut.

City of Columbia, SC Quarterly SSO Listing 2nd Quarter 2019									
SSO Date	SSO Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
5/2/2019	12:40	5031 Courtney Rd, Columbia, SC 29206	Manhole	5/2/2019	14:30	1,100		Collapsed Line	Washed Main Line 275 Feet To Remove Stoppage And Resume Normal Flow. Line Added To Preventative Maintenance Wash List.
5/2/2019	14:30	232 Tabor Dr, Columbia, SC 29203	Cleanout	5/2/2019	14:30	15		Grease	Washed City Cleanout 25 Feet. Washed Service Line 25 Feet To Remove Stoppage.
5/6/2019	08:50	157 Sandhurst Rd, Columbia, SC 29210	Manhole	5/13/2019	13:00	800	Tributary To Kinley Creek	Debris	Washed Main Line 200 Feet To Resume Normal Flow. Washed Main Line 40 Feet To Remove Debris.
5/7/2019	11:30	211 Main St, Columbia, SC 29201	Cleanout	5/7/2019	12:45	234	Storm Drain	Debris	Removed Stoppage To Resume Normal Flow. Removed Pipe That Was Stuck In The Service Line. Repaired Cleanout.
5/14/2019	09:20	131 Honey Tree Rd, Columbia, SC 29209	Manhole	5/14/2019	09:20	200		Roots	Washed Main Line 80 Feet. Removed Stoppage.
5/14/2019	18:30	2628 Pleasant Ridge Dr, Columbia, SC 29209	Manhole	TBD		17	Storm Drain	Roots	Washed Main Line 100 Feet To Remove Blockage. Tape Renewal And City Cleanout Installation.
5/22/2019	12:00	4900 Broad River Rd, Columbia, SC 29212	Manhole	TBD		300	Unnamed Pond	Roots	Washed Main Line 145 Feet To Remove Stoppage. Main Line Repair.
5/24/2019	09:30	100 Fairforest Rd, Columbia, SC 29212	Cleanout	5/24/2019	09:30	45	Storm Drain	Collapsed Line	Washed Service Line 60 Feet To Main Line And Removed Blockage. Renew Tap To The City Main Due To Collapse.
5/27/2019	16:15	332 Townes Rd, Columbia, SC 29210	Cleanout	5/28/2019	13:32	11		Collapsed Line	Removed Stoppage To Resume Normal Flow. Repaired Service Line.
5/27/2019	18:00	908 Woodland Dr, Columbia, SC 29205	Other	5/30/2019	08:00	65		Collapsed Line	Spill Was Not Active Upon Arrival. Service Line Repair.
6/3/2019	17:00	225 Church St, Columbia, SC 29201	Cleanout	6/4/2019	10:47	108		Collapsed Line	Service Line Wash To Remove Stoppage And Resume Normal Flow. Emergency Service Line Repair.
6/3/2019	11:10	1037 Howe St, Columbia, SC 29205	Cleanout	6/3/2019	11:20	10		Debris	Removed Stoppage To Resume Normal Flow. Washed Service Line 35 Feet; Stoppage Removed.
6/3/2019	15:15	7535 Garners Ferry Rd, Columbia, SC 29209	Manhole	6/3/2019	16:00	360		Grease	Washed Main Line To Remove Stoppage. Washed Main Line 450 Feet To Remove Grease.
6/5/2019		1200 Simmon Tree Lane, Columbia, SC 29201	Other	TBD		1		Treatment Plant	Added Defoamer And Beat Down Foam. Applied Defoamer And Consulting With Engineers About Cause Of Digester Foaming.
6/6/2019		1200 Simmon Tree Lane, Columbia, SC 29201	Other	6/5/2019	TBD	1		Treatment Plant	Beat Down Foam And Applied Defoamer. Applied Defoamer And Consulting With Engineers About Cause Of Digester Foaming.
6/9/2019	11:43	1620 Stevenson Ave, Columbia, SC 29203	Cleanout	N/A	N/A	6,350	Storm Drain	Wet Weather	Observation Only; Wet Weather.
6/9/2019	09:30	228 Hickory Ridge Rd, Columbia, SC 29209	Other	6/13/2019	TBD	28,125	Mill Creek	Wet Weather	Set Up A Bypass Pump. Main Line Repair.
6/12/2019	16:18	1020 Lady St, Columbia, SC 29201	Cleanout	6/12/2019	16:30	8	Storm Drain	Debris	Washed Service Line 20 Feet. Washed Service Line, Removed Rock In Line.
6/21/2019	13:00	7812 Teague Rd, Columbia, SC 29209	Cleanout	6/21/2019	13:15	15		Debris	Washed Service Line To Remove Stoppage. Washed Service Line 20 Feet.
6/27/2019	20:07	420 Forest Grove Cir, Columbia, SC 29210	Manhole	6/27/2019	20:30	115		Roots	Cleared Roots And Debris From Manhole To Resume Normal Flow. Cleaned Manhole.

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 revised QAPP was approved on January 9, 2019. The QAPP was subsequently revised and resubmitted to SCDHEC on January 22, 2019 to reflect a change in the testing laboratory. Following comments from SCDHEC and additional resubmittals, the City received approval of the revised QAPP from EPA and SCDHEC on April 2, 2019.

The City monitored quarterly for the first three years under the CD (through January 15, 2019) and will monitor 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 2019 Q2 was completed on April 26, 2019, May 28, 2019, and June 28, 2019. 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, Revised December 2018

Laboratory Report Date: 4/26/19

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

Andrea Bolling
Project Verifier/QA Manager

5/28/19
Date

Andrea Bolling
Printed Name

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

AJ Jesse
Project Manager/Project Validator

5/28/19
Date

AJ Jesse
Printed Name



Laboratory Report

Client	Woolpert Inc. - City of Columbia Michael Long 2000 Center Point Road Ste 2200 Columbia, SC 29210	Project:	Water Quality Testing
		Work Order:	9041276
		Received:	04/22/2019 15:55

Dear Client:

Rogers and Callcott appreciates the opportunity to be of service to you. The attached laboratory services report includes analytical results and chain of custody for samples that were received on April 22, 2019. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements for the TNI standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty is available upon request.

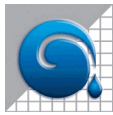
Privileged / Confidential information may be contained in this report and is intended only for the use of the addressee. If you are not the addressee, or the person responsible for delivering to the person addressed, you may not copy or deliver this message to anyone else. If you receive this message by mistake, please notify Rogers and Callcott immediately.

We strive to provide excellent service to our clients. Please contact Lauren Woodrum, your Project Manager, at lauren.woodrum@rogersandcallcott.com or (864)-232-1556 if you have any questions about this report.

CC: Trevor Gauron

Report Approved By:

Lauren Woodrum
Project Manager



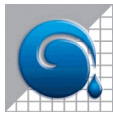
Certificate of Analysis

*South Carolina Greenville Laboratory Identification 23105
 South Carolina Columbia Laboratory Identification 40572
 North Carolina Laboratory Certification Number 27
 North Carolina Drinking Water Lab Number 45710
 NELAP Utah Certificate Number SC000042014-1
 Georgia Drinking Water Lab ID 880*

Client Woolpert Inc. - City of Columbia
 Michael Long
 2000 Center Point Road Ste 2200
 Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9041276
Received: 04/22/2019 15:55

Sample Number	Sample Description	Matrix	Sampled	Type
9041276-01	DHEC B-280 Smith Branch @ N. Main St	Wastewater	04/22/19 14:35	Grab
9041276-02	DHEC B-280 Smith Branch @ N. Main St	Wastewater	04/22/19 14:36	Grab
9041276-03	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	04/22/19 15:05	Grab
9041276-04	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	04/22/19 15:06	Grab
9041276-05	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	04/22/19 15:25	Grab
9041276-06	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	04/22/19 15:26	Grab



Woolpert Inc. - City of Columbia
2000 Center Point Road Ste 2200
Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9041276
Reported: 04/26/19 13:59

Sample Data

Sample Number 9041276-01
Sample Description DHEC B-280 Smith Branch @ N. Main St collected on 04/22/19 14:35

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Field Parameters										
Dissolved Oxygen	8.1	0.1	mg/L	1.00	04/22/19 14:35	SM 4500 OG-2011		CDT	B9D1181	RC-C
Grab	Complete				04/22/19 14:35	Grab		CDT	B9D1181	RC-C
Temperature	18.4	0.0	°C	1.00	04/22/19 14:35	SM 2550B-2010		CDT	B9D1181	RC-C

Sample Number 9041276-02
Sample Description DHEC B-280 Smith Branch @ N. Main St collected on 04/22/19 14:36

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Microbiological Parameters										
E. Coli	104	20	MPN/100 mL	20.0	04/22/19 16:31	SM 9223B-2004		MJT	B9D1251	RC-C
General Chemistry Parameters										
Total Suspended Solids	3.0	1.0	mg/L	1.00	04/23/19 08:25	SM 2540D-2011		RAM	B9D1170	RC-C

Sample Number 9041276-03
Sample Description DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 04/22/19 15:05

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Field Parameters										
Dissolved Oxygen	8.0	0.1	mg/L	1.00	04/22/19 15:05	SM 4500 OG-2011		CDT	B9D1181	RC-C
Temperature	22.2	0.0	°C	1.00	04/22/19 15:05	SM 2550B-2010		CDT	B9D1181	RC-C

Sample Number 9041276-04
Sample Description DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 04/22/19 15:06

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Microbiological Parameters										
E. Coli	20	20	MPN/100 mL	20.0	04/22/19 16:31	SM 9223B-2004		MJT	B9D1251	RC-C
General Chemistry Parameters										
Total Suspended Solids	8.4	2.0	mg/L	2.00	04/23/19 08:25	SM 2540D-2011		RAM	B9D1170	RC-C



Woolpert Inc. - City of Columbia
2000 Center Point Road Ste 2200
Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9041276
Reported: 04/26/19 13:59

Sample Number 9041276-05
Sample Description DHEC C-017 Gills Creek @ Bluff Road collected on 04/22/19 15:25

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Field Parameters										
Dissolved Oxygen	8.2	0.1	mg/L	1.00	04/22/19 15:25	SM 4500 OG-2011		CDT	B9D1181	RC-C
Temperature	19.4	0.0	°C	1.00	04/22/19 15:25	SM 2550B-2010		CDT	B9D1181	RC-C

Sample Number 9041276-06
Sample Description DHEC C-017 Gills Creek @ Bluff Road collected on 04/22/19 15:26

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Microbiological Parameters										
E. Coli	1024	20	MPN/100 mL	20.0	04/22/19 16:31	SM 9223B-2004		MJT	B9D1251	RC-C
General Chemistry Parameters										
Total Suspended Solids	4.1	1.0	mg/L	1.00	04/23/19 08:25	SM 2540D-2011		RAM	B9D1170	RC-C



Woolpert Inc. - City of Columbia
2000 Center Point Road Ste 2200
Columbia, SC 29210

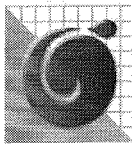
Project: Water Quality Testing
Work Order: 9041276
Reported: 04/26/19 13:59

Data Qualifiers and Definitions

ND Analyte NOT DETECTED at or above the reporting limit
NR Not reported

Laboratory Reference:

RC-G = Rogers and Callcott, 426 Fairforest Way, Greenville, SC 29607 / SC Lab ID 23105
RC-C = Rogers and Callcott, 215B Stoneridge Drive, Columbia, SC 29210 / SC Lab ID 40572



Rogers & Callcott

ENVIRONMENTAL

Mailing Address: PO Box 5655 Greenville, SC 29606 Phone (864) 232-1556
 Shipping Address: 426 Fairforest Way Greenville, SC 29607 Phone (803) 509-8999

Client Name: Woolpert - City of Columbia
 Address: 2000 Center Point Road Suite 2200 Columbia, SC 29210
 Report To: Michael Long
 Email Address: Michael.long@woolpert.com
 Telephone # 803-214-5936
 PO # _____ Project # Water Quality Testing

CHAIN OF CUSTODY RECORD

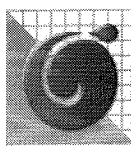
WORK ORDER

9041276

R & C WORK ORDER	YR DATE	TIME	SAMPLE DESCRIPTION	Total Number of Containers	Parameter(s) ↑	N	N	Filtered (Yes/No)	Cooled (Yes/No)	Container Type (Plastic/Glass)	Container Volume (mL)	Sample Type (Grab/Composite)	Sample Source (WW, GW, DW, SW, S, Other)	Preservation Code(s)	COMMENTS
-02	4/22	1434	DHEC B-280 (Smith Branch @ N. Main St)	1	TSS	Y	N							A - None E - HCl I - Zn Acetate B - HNO ₃ F - Na ₂ S ₂ O ₃ J - H ₃ PO ₄ C - H ₂ SO ₄ G - Boric Acid K - NaH ₂ PO ₄ D - NaOH H - Ascorbic Acid L - NH ₄ Cl	D.O.- 8.16 mg/L -01
-02	1	1436	DHEC B-280 (Smith Branch @ N. Main St)	1	E. Coli	Y	N								Temp- 18.4 °C
															Collected @ 1435
															Analyzed @ 1435
															Weather- 75 Clear, Sunny

SAMPLER RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
1. <i>[Signature]</i>	4/22/19 1555	2. <i>[Signature]</i>	4-22-19 1555
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
3.		4.	
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
5.		6.	
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
7.		8.	

Composite Start Date: _____
 Composite Start Time: _____
 Time or Flow (Circle one) Initials: _____
 Temperature of blank or representative sample
 At time of collection _____ °C
 At time of lab receipt 2.6 °C



Rogers & Callcott

ENVIRONMENTAL

CHAIN OF CUSTODY RECORD

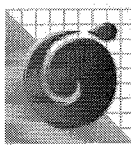
WORK ORDER 9041276

Mailing Address: PO Box 5655 Greenville, SC 29606 Phone (864) 232-1556
 Shipping Address: 426 Fairforest Way Greenville, SC 29607 Phone (864) 232-6140
 215B Stoneridge Drive Columbia, SC 29210 Phone (803) 509-8999

Client Name: Woolpert - City of Columbia
 Address: 2000 Center Point Road Suite 2200 Columbia, SC 29210
 Report To: Michael Long
 Email Address: Michael.long@woolpert.com
 Telephone #: 803-214-5936
 PO #: _____ Project # Water Quality Testing

R & C WORK ORDER	YR DATE	TIME	SAMPLE DESCRIPTION	Total Number of Containers	Parameter(s) ↑	N	N	Filtered (Yes/No)	Cooled (Yes/No)	Container Type (Plastic/Glass)	Container Volume (mL)	Sample Type (Grab/Composite)	Sample Source (WW, GW, DW, SW, S, Other)	Preservation Code(s)	COMMENTS	
-04	4/22	1506	DHEC C-001 (Gills Creek @ Garners Ferry Rd)	1	TSS	Y	N							A - None E - HCl B - HNO ₃ F - Na ₂ S ₂ O ₃ G - H ₂ SO ₄ H - NaOH I - Zn Acetate J - H ₃ PO ₄ K - NaH ₂ PO ₄ L - NH ₄ Cl	D.O. - 8.03 mg/L -03	
-04	1	1506	DHEC C-001 (Gills Creek @ Garners Ferry Rd)	1	E. Coli	Y	N									Temp - 22.2 °C
																Collected @ 1505
																Analyzed @ 1505
																Weather - 75 ckw, Sunny

SAMPLER - RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
1. <i>[Signature]</i>	4/22/19 1555	2. <i>[Signature]</i>	4-22-19 1555
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
3.		4.	
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
5.		6.	
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
7.		8.	



Rogers & Callcott

ENVIRONMENTAL

Mailing Address: PO Box 5655 Greenville, SC 29606 Phone (864) 232-1556
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 215B Stoneridge Drive Columbia, SC 29210 Phone (803) 509-8999

Client Name: Woolpert - City of Columbia
 Address: 2000 Center Point Road Suite 2200 Columbia, SC 29210
 Report To: Michael Long
 Email Address: Michael.long@woolpert.com
 Telephone # 803-214-5936
 PO # _____ Project # Water Quality Testing

CHAIN OF CUSTODY RECORD

WORK ORDER 9041276

R & C WORK ORDER	YR / DATE	TIME	SAMPLE DESCRIPTION	Total Number of Containers		Parameter(s) ↑	N	Y	P	0.5G	G	WW	A	F	TSS	F. Coll	Filtered (Yes/No)	Cooled (Yes/No)	Container Type (Plastic/Glass)	Container Volume (mL)	Sample Type (Grab/Composite)	Sample Source (WW, GW, DW, SW, S, Other)	Preservation Code(s) A - None E - HCl I - Zn Acetate B - HNO ₃ F - Na ₂ S ₂ O ₃ J - H ₃ PO ₄ C - H ₂ SO ₄ G - Boric Acid K - NaH ₂ PO ₄ D - NaOH H - Ascorbic Acid L - NH ₄ Cl	COMMENTS
				1	2																			
-06	4/22	1526	DHEC C-017 (Gills Creek @ Bluff Road)	1											1								D.O.- 8.17 mg/L -05	
-06	4/22	1526	DHEC C-017 (Gills Creek @ Bluff Road)	1											1								Temp- 19.4 °C Collected @ 1525 Analyzed @ 1526 905 4/22/19 1525	
																							Weather- 75 clear, Sunny	

SAMPLER - RELINQUISHED BY: <u>OST</u>	DATE/TIME: <u>4/22/19 1555</u>	RECEIVED BY: <u>2. [Signature]</u>	DATE/TIME: <u>4-22-19 1555</u>
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY: 4.	DATE/TIME:
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY: 6.	DATE/TIME:
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY: 8.	DATE/TIME:

Composite Start Date: _____
 Composite Start Time: _____
 Time or Flow (Circle one) Initials: _____
 Temperature of blank or representative sample
 At time of collection _____ °C
 At time of lab receipt 216 °C



Sample Receipt Verification

Client: Woolpert - City of Cola Date Received: 4.22.19 Work Order: 9041276

Carrier Name: (to Columbia)	Client	FedEx	UPS	US Mail	Courier	Field Services	Other: _____
Tracking Number: _____							

Carrier Name: (to Greenville)	Client	FedEx	UPS	US Mail	Courier	Field Services	Other: _____
Tracking Number: <u>N/A</u>							

Receipt Criteria	Y e s	No	N A	Comments
Shipping container / cooler intact?	X			Damaged Leaking Other:
Custody seals intact?			X	
COC included with samples?	X			
COC signed when relinquished and received?	X			
Sample bottles intact?	X			Damaged Leaking Other:
Sample ID on COC agree with label on bottle(s)?	X			
Date / time on COC agree with label on bottle(s)?	X			
Number of bottles on COC agrees with number of bottles received?	X			
Samples received within holding time?	X			
Sample volume sufficient for analysis?	X			
VOA vials free of headspace (<6mm bubble)?			X	
Samples requiring pH preservation at proper pH? Note: Samples for metals analysis may be preserved upon receipt in the lab. Note: Samples for O&G and VOA analysis – preservation checked at bench.			X	
Samples dechlorinated for parameters requiring chlorine removal at the time of sample collection? Note: Chlorine checked at bench for samples requiring Bacterial, VOA, and HAA analysis.	X			
Samples cooled when received in Columbia ?				Ice Cold Packs Dry Ice None
	Temp at time of receipt	<u>2.6</u> °C		
	Temp measured with IR SN: 36391069WS			
Samples cooled when received in Greenville ?				Ice Cold Packs Dry Ice None
	Temp at time of receipt	<u>N/A</u> °C		
	Temp measured with IR SN: 97050067			

If in-house preservation used – record Lot #			
HCL		H ₃ PO ₄	
H ₂ SO ₄		NaOH	
HNO ₃		Other	

Comments:

Were non-conformance issues noted at initial sample receipt? Yes or **No**

Non-Conformance issue other than noted above:

Note: Samples received initially in Columbia Facility. Sample preservation checks performed at Columbia Facility.

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, Revised December 2018

Laboratory Report Date: 5/28/19

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

Miranda Staples

Project Verifier/QA Manager

6/14/19

Date

Miranda Staples

Printed Name

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

AJ Jesse

Project Manager/Project Validator

6/14/19

Date

AJ Jesse

Printed Name



Laboratory Report

Client	Woolpert Inc. - City of Columbia Michael Long 2000 Center Point Road Ste 2200 Columbia, SC 29210	Project:	Water Quality Testing
		Work Order:	9050955
		Received:	05/20/2019 15:57

Dear Client:

Rogers and Callcott appreciates the opportunity to be of service to you. The attached laboratory services report includes analytical results and chain of custody for samples that were received on May 20, 2019. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements for the TNI standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty is available upon request.

Privileged / Confidential information may be contained in this report and is intended only for the use of the addressee. If you are not the addressee, or the person responsible for delivering to the person addressed, you may not copy or deliver this message to anyone else. If you receive this message by mistake, please notify Rogers and Callcott immediately.

We strive to provide excellent service to our clients. Please contact Lauren Woodrum, your Project Manager, at lauren.woodrum@rogersandcallcott.com or (864)-232-1556 if you have any questions about this report.

CC: Trevor Gauron

Report Approved By:

Lauren Woodrum
Project Manager



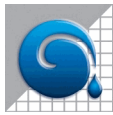
*South Carolina Greenville Laboratory Identification 23105
South Carolina Columbia Laboratory Identification 40572
North Carolina Laboratory Certification Number 27
North Carolina Drinking Water Lab Number 45710
NELAP Utah Certificate Number SC000042014-1
Georgia Drinking Water Lab ID 880*

Certificate of Analysis

Client Woolpert Inc. - City of Columbia
Michael Long
2000 Center Point Road Ste 2200
Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9050955
Received: 05/20/2019 15:57

Sample Number	Sample Description	Matrix	Sampled	Type
9050955-01	DHEC B-280 Smith Branch @ N. Main St	Wastewater	05/20/19 14:37	Grab
9050955-02	DHEC B-280 Smith Branch @ N. Main St	Wastewater	05/20/19 14:36	Grab
9050955-03	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	05/20/19 15:08	Grab
9050955-04	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	05/20/19 15:07	Grab
9050955-05	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	05/20/19 15:30	Grab
9050955-06	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	05/20/19 15:29	Grab



Woolpert Inc. - City of Columbia
2000 Center Point Road Ste 2200
Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9050955
Reported: 05/28/19 12:49

Sample Data

Sample Number 9050955-01
Sample Description DHEC B-280 Smith Branch @ N. Main St collected on 05/20/19 14:37

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Field Parameters										
Dissolved Oxygen	7.6	0.1	mg/L	1.00	05/20/19 14:38	SM 4500 OG-2011		CDT	B9E1022	RC-C
Grab	Complete				05/20/19 14:37	Grab		CDT	B9E1022	RC-C
Temperature	25.3	0.0	°C	1.00	05/20/19 14:38	SM 2550B-2010		CDT	B9E1022	RC-C

Sample Number 9050955-02
Sample Description DHEC B-280 Smith Branch @ N. Main St collected on 05/20/19 14:36

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Microbiological Parameters										
E. Coli	290	20	MPN/100 mL	20.0	05/20/19 16:53	SM 9223B-2004		BNE	B9E1083	RC-C
General Chemistry Parameters										
Total Suspended Solids	1.5	1.0	mg/L	1.00	05/21/19 08:39	SM 2540D-2011		RAM	B9E1015	RC-C

Sample Number 9050955-03
Sample Description DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 05/20/19 15:08

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Field Parameters										
Dissolved Oxygen	7.5	0.1	mg/L	1.00	05/20/19 15:08	SM 4500 OG-2011		CDT	B9E1022	RC-C
Temperature	28.7	0.0	°C	1.00	05/20/19 15:08	SM 2550B-2010		CDT	B9E1022	RC-C

Sample Number 9050955-04
Sample Description DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 05/20/19 15:07

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Microbiological Parameters										
E. Coli	124	20	MPN/100 mL	20.0	05/20/19 16:53	SM 9223B-2004		BNE	B9E1083	RC-C
General Chemistry Parameters										
Total Suspended Solids	44.5	5.0	mg/L	5.00	05/21/19 08:39	SM 2540D-2011		RAM	B9E1015	RC-C



Woolpert Inc. - City of Columbia
2000 Center Point Road Ste 2200
Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9050955
Reported: 05/28/19 12:49

Sample Number 9050955-05
Sample Description DHEC C-017 Gills Creek @ Bluff Road collected on 05/20/19 15:30

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Field Parameters										
Dissolved Oxygen	5.9	0.1	mg/L	1.00	05/20/19 15:30	SM 4500 OG-2011		CDT	B9E1022	RC-C
Temperature	28.2	0.0	°C	1.00	05/20/19 15:30	SM 2550B-2010		CDT	B9E1022	RC-C

Sample Number 9050955-06
Sample Description DHEC C-017 Gills Creek @ Bluff Road collected on 05/20/19 15:29

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Microbiological Parameters										
E. Coli	60	20	MPN/100 mL	20.0	05/20/19 16:53	SM 9223B-2004		BNE	B9E1083	RC-C
General Chemistry Parameters										
Total Suspended Solids	3.7	1.0	mg/L	1.00	05/21/19 08:39	SM 2540D-2011		RAM	B9E1015	RC-C



Woolpert Inc. - City of Columbia
2000 Center Point Road Ste 2200
Columbia, SC 29210

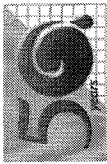
Project: Water Quality Testing
Work Order: 9050955
Reported: 05/28/19 12:49

Data Qualifiers and Definitions

ND Analyte NOT DETECTED at or above the reporting limit
NR Not reported

Laboratory Reference:

RC-G = Rogers and Callcott, 426 Fairforest Way, Greenville, SC 29607 / SC Lab ID 23105
RC-C = Rogers and Callcott, 215B Stoneridge Drive, Columbia, SC 29210 / SC Lab ID 40572



Rogers & Callcott

ENVIRONMENTAL
Half a century of commitment and quality

Mailing Address: PO Box 5655 Greenville, SC 29606 Phone (864) 232-1556
 Shipping Address: 426 Fairforest Way Greenville, SC 29607 Phone (864) 232-6140

215B Stoneridge Drive Columbia, SC 29210 Phone (803) 509-8999

Client Name: Woolpert - City of Columbia
Address: 2000 Center Point Road Suite 2200 Columbia, SC 29210
Report To: Michael Long
Email Address: Michael.long@woolpert.com
Telephone #: 803-214-5936

PO #: _____ **Project #:** Water Quality Testing

CHAIN OF CUSTODY RECORD

WORK ORDER

9050955

R & C WORK ORDER	YR/ DATE	TIME	SAMPLE DESCRIPTION	Total Number of Containers	Parameter(s) ↑	TSS	F. Coli	N	N	Filtered (Yes/No)	Cooled (Yes/No)	Container Type (Plastic/Glass)	Container Volume (mL)	Sample Type (Grab/Composite)	Sample Source (WW, GW, DW, SW, S, Other)	Preservation Code(s)	COMMENTS
-02	5/20	1436	DHEC B-280 (Smith Branch @ N. Main St)	1		1		Y	N								D.O.- 7.57 mg/L
-02	5/20	1436	DHEC B-280 (Smith Branch @ N. Main St)	1		1	1	P	N								Temp- 25.3 °C
																	Collected @ 5/20/19
																	Analyzed @ 5/20/19
																	Weather- 92 / Partly cloudy

DATE/TIME: 5-20-19 1557
 RECEIVED BY: 2. [Signature]
 DATE/TIME: 5/20/19 1557

DATE/TIME: _____
 RECEIVED BY: 4. _____

DATE/TIME: _____
 RECEIVED BY: 6. _____

DATE/TIME: _____
 RECEIVED BY: 8. _____

Composite Start Date/Time: _____
 Composite End Date/Time: _____
 Time or Flow (Circle one) Initials: _____

Temperature of blank or representative sample
 At time of collection _____ °C
 At time of lab receipt 0.3 °C

CHAIN OF CUSTODY RECORD

Rogers & Callcott
ENVIRONMENTAL
Half a century of commitment and quality

Mailing Address: PO Box 5655
Greenville, SC 29606
Phone (864) 232-1556

Shipping Address: 426 Fairforest Way
Greenville, SC 29607
Phone (864) 232-6140

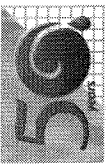
215B Stoneridge Drive
Columbia, SC 29210
Phone (803) 509-8999

Client Name: Woolpert - City of Columbia
Address: 2000 Center Point Road Suite 2200
Columbia, SC 29210
Report To: Michael Long
Email Address: Michael.long@woolpert.com
Telephone #: 803-214-5936

PO # _____ Project # Water Quality Testing

Parameter(s) ↓	Total Number of Containers	N	N	Filtered (Yes/No)
	1	Y	Y	Cooled (Yes/No)
TSS	1	P	P	Container Type (Plastic/Glass)
	1	0.5G	1.20	Container Volume (mL)
F. Coli	1	G	G	Sample Type (Grab/Composite)
	1	WW	WW	Sample Source (WW, GW, DW, SW, S, Other)
D.O.	1	A	F	Preservation Code(s) A - None E - HCl I - Zn Acetate B - HNO ₃ F - Na ₂ S ₂ O ₃ J - H ₃ PO ₄ C - H ₂ SO ₄ G - Boric Acid K - NaH ₂ PO ₄ D - NaOH H - Ascorbic Acid L - NH ₄ Cl
	1			
Temp	1			COMMENTS
Collected @	1			D.O. - <u>7.44</u> mg/L
Analyzed @	1			Temp - <u>28.7</u> °C
				Collected @ <u>1508 5/20/19</u>
				Analyzed @ <u>1508 5/20/19</u>
				Weather - <u>91 / mostly cloudy</u>

SAMPLER RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
1. <u>ogin</u>	<u>5/20/19 1557</u>	<u>2. [Signature]</u>	<u>5-20-19 1557</u>
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
3.		4.	
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
5.		6.	
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
7.		8.	
Composite Start Date/Time:	Composite End Date/Time:	Time or Flow (Circle one)	Initials:
Temperature of blank or representative sample			
At time of collection _____ °C			
At time of lab receipt <u>03</u> °C			



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Mailing: PO Box 5655
Address: Greenville, SC 29606
Phone: (864) 232-1556

Shipping: 426 Fairforest Way
Address: Greenville, SC 29607
Phone: (864) 232-6140

Client Name: Woolpert - City of Columbia
Address: 2000 Center Point Road Suite 2200
Columbia, SC 29210

Report To: Michael Long
Email Address: Michael.long@woolpert.com
Telephone #: 803-214-5936

PO #: _____ **Project #:** Water Quality Testing

R & C WORK ORDER	YR DATE	TIME	SAMPLE DESCRIPTION
-00	5/20	1529	DHEC C-017 (Gills Creek @ Bluff Road)
-00	5/20	1529	DHEC C-017 (Gills Creek @ Bluff Road)

SAMPLER - RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
1. <i>[Signature]</i>	5/20/19 1557	2. <i>[Signature]</i>	5-20-19 1557
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
3. _____	_____	4. _____	_____
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
5. _____	_____	6. _____	_____
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
7. _____	_____	8. _____	_____

CHAIN OF CUSTODY RECORD

WORK ORDER 9050955

Parameter(s) ↑	Total Number of Containers	N	Y	N	Y	Filtered (Yes/No)	Cooled (Yes/No)	Container Type (Plastic/Glass)	Container Volume (mL)	Sample Type (Grab/Composite)	Sample Source (WW, GW, DW, SW, S, Other)	Preservation Code(s)	COMMENTS
TSS	1			N								A - None E - HCl I - Zn Acetate B - HNO ₃ F - Na ₂ S ₂ O ₃ J - H ₃ PO ₄ C - H ₂ SO ₄ G - Boric Acid K - NaH ₂ PO ₄ D - NaOH H - Ascorbic Acid L - NH ₄ Cl	
F. Coli	1			N									D.O. - 5.93 mg/L Temp - 28.2 °C Collected @ 1530 5/20/19 Analyzed @ 1530 5/20/19 Weather - 90 / Mostly Cloudy

Composite Start Date/Time:	Composite End Date/Time:	Time or Flow (Circle one)	Initials:
5-20-19 1557			
Temperature of blank or representative sample	At time of collection	At time of lab receipt	0.3 °C



Sample Receipt Verification

Client: Woolpert City of Columbia Date Received: 5-20-19 Work Order: 9050955

Carrier Name: (to Columbia)	Client	FedEx	UPS	US Mail	Courier	Field Services	Other: _____
Tracking Number: _____							

Carrier Name: (to Greenville)	Client	FedEx	UPS	US Mail	Courier	Field Services	Other: _____
Tracking Number: <u>NA</u>							

Receipt Criteria	Y e s	No	N A	Comments
Shipping container / cooler intact?	✓			Damaged Leaking Other:
Custody seals intact?			✓	
COC included with samples?	✓			
COC signed when relinquished and received?	✓			
Sample bottles intact?	✓			Damaged Leaking Other:
Sample ID on COC agree with label on bottle(s)?	✓			
Date / time on COC agree with label on bottle(s)?	✓			
Number of bottles on COC agrees with number of bottles received?	✓			
Samples received within holding time?	✓			
Sample volume sufficient for analysis?	✓			
VOA vials free of headspace (<6mm bubble)?			✓	
Samples requiring pH preservation at proper pH? Note: Samples for metals analysis may be preserved upon receipt in the lab. Note: Samples for O&G and VOA analysis – preservation checked at bench.			✓	
Samples dechlorinated for parameters requiring chlorine removal at the time of sample collection? Note: Chlorine checked at bench for samples requiring Bacterial, VOA, and HAA analysis.	✓			
Samples cooled when received in Columbia ?	Temp at time of receipt <u>0.3</u> °C Temp measured with IR SN: 36301069WS	✓		Ice Cold Packs Dry Ice None
Samples cooled when received in Greenville ?	Temp at time of receipt <u>NA</u> °C Temp measured with IR SN: 97050067			Ice Cold Packs Dry Ice None

If in-house preservation used – record Lot #			
HCL		H ₃ PO ₄	
H ₂ SO ₄		NaOH	
HNO ₃		Other	

Comments:

Were non-conformance issues noted at initial sample receipt? Yes or **No**

Non-Conformance issue other than noted above:

Note: Samples received initially in Columbia Facility. Sample preservation checks performed at Columbia Facility.

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, Revised December 2018

Laboratory Report Date: 6/28/19

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

Andrea Bolling
Project Verifier/QA Manager

7/5/19
Date

Andrea Bolling
Printed Name

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

AJ Jesse
Project Manager/Project Validator

7/5/19
Date

AJ Jesse
Printed Name



Laboratory Report

Client	Woolpert Inc. - City of Columbia Michael Long 2000 Center Point Road Ste 2200 Columbia, SC 29210	Project:	Water Quality Testing
		Work Order:	9061110
		Received:	06/21/2019 10:50

Dear Client:

Rogers and Callcott appreciates the opportunity to be of service to you. The attached laboratory services report includes analytical results and chain of custody for samples that were received on June 21, 2019. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements for the TNI standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty is available upon request.

Privileged / Confidential information may be contained in this report and is intended only for the use of the addressee. If you are not the addressee, or the person responsible for delivering to the person addressed, you may not copy or deliver this message to anyone else. If you receive this message by mistake, please notify Rogers and Callcott immediately.

We strive to provide excellent service to our clients. Please contact Lauren Woodrum, your Project Manager, at lauren.woodrum@rogersandcallcott.com or (864)-232-1556 if you have any questions about this report.

CC: Trevor Gauron

Report Approved By:

Lauren Woodrum
Project Manager



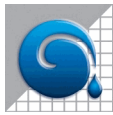
Certificate of Analysis

*South Carolina Greenville Laboratory Identification 23105
 South Carolina Columbia Laboratory Identification 40572
 North Carolina Laboratory Certification Number 27
 North Carolina Drinking Water Lab Number 45710
 NELAP Utah Certificate Number SC000042014-1
 Georgia Drinking Water Lab ID 880*

Client Woolpert Inc. - City of Columbia
 Michael Long
 2000 Center Point Road Ste 2200
 Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9061110
Received: 06/21/2019 10:50

Sample Number	Sample Description	Matrix	Sampled	Type
9061110-01	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	06/21/19 09:23	Grab
9061110-02	DHEC C-017 Gills Creek @ Bluff Road	Wastewater	06/21/19 09:20	Grab
9061110-03	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	06/21/19 09:49	Grab
9061110-04	DHEC C-001 Gills Creek @ Garners Ferry Rd	Wastewater	06/21/19 09:47	Grab
9061110-05	DHEC B-280 Smith Branch @ N. Main St	Wastewater	06/21/19 10:29	Grab
9061110-06	DHEC B-280 Smith Branch @ N. Main St	Wastewater	06/21/19 10:28	Grab



Woolpert Inc. - City of Columbia
2000 Center Point Road Ste 2200
Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9061110
Reported: 06/28/19 09:26

Sample Data

Sample Number 9061110-01
Sample Description DHEC C-017 Gills Creek @ Bluff Road collected on 06/21/19 09:23

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Field Parameters										
Dissolved Oxygen	5.2	0.1	mg/L	1.00	06/21/19 09:25	SM 4500 OG-2011		MJT	B9F0943	RC-C
Grab	Complete				06/21/19 09:23	Grab		MJT	B9F0943	RC-C
Temperature	25.4	0.0	°C	1.00	06/21/19 09:25	SM 2550B-2010		MJT	B9F0943	RC-C

Sample Number 9061110-02
Sample Description DHEC C-017 Gills Creek @ Bluff Road collected on 06/21/19 09:20

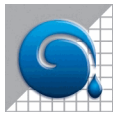
Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Microbiological Parameters										
E. Coli	242	20	MPN/100 mL	20.0	06/21/19 13:08	SM 9223B-2004		RAM	B9F1110	RC-C
General Chemistry Parameters										
Total Suspended Solids	6.2	1.2	mg/L	1.25	06/25/19 09:00	SM 2540D-2011		RAM	B9F1019	RC-C

Sample Number 9061110-03
Sample Description DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 06/21/19 09:49

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Field Parameters										
Dissolved Oxygen	7.0	0.1	mg/L	1.00	06/21/19 09:50	SM 4500 OG-2011		MJT	B9F0943	RC-C
Temperature	27.6	0.0	°C	1.00	06/21/19 09:50	SM 2550B-2010		MJT	B9F0943	RC-C

Sample Number 9061110-04
Sample Description DHEC C-001 Gills Creek @ Garners Ferry Rd collected on 06/21/19 09:47

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Microbiological Parameters										
E. Coli	104	20	MPN/100 mL	20.0	06/21/19 13:08	SM 9223B-2004		RAM	B9F1110	RC-C
General Chemistry Parameters										
Total Suspended Solids	8.6	2.0	mg/L	2.00	06/25/19 09:00	SM 2540D-2011		RAM	B9F1019	RC-C



Woolpert Inc. - City of Columbia
2000 Center Point Road Ste 2200
Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9061110
Reported: 06/28/19 09:26

Sample Number 9061110-05
Sample Description DHEC B-280 Smith Branch @ N. Main St collected on 06/21/19 10:29

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Field Parameters										
Dissolved Oxygen	6.8	0.1	mg/L	1.00	06/21/19 10:29	SM 4500 OG-2011		MJT	B9F0943	RC-C
Temperature	24.0	0.0	°C	1.00	06/21/19 10:29	SM 2550B-2010		MJT	B9F0943	RC-C

Sample Number 9061110-06
Sample Description DHEC B-280 Smith Branch @ N. Main St collected on 06/21/19 10:28

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch	Lab
Microbiological Parameters										
E. Coli	3808	20	MPN/100 mL	20.0	06/21/19 13:08	SM 9223B-2004		RAM	B9F1110	RC-C
General Chemistry Parameters										
Total Suspended Solids	3.1	1.0	mg/L	1.00	06/25/19 09:00	SM 2540D-2011		RAM	B9F1019	RC-C



Woolpert Inc. - City of Columbia
2000 Center Point Road Ste 2200
Columbia, SC 29210

Project: Water Quality Testing
Work Order: 9061110
Reported: 06/28/19 09:26

Data Qualifiers and Definitions

ND Analyte NOT DETECTED at or above the reporting limit
NR Not reported

Laboratory Reference:

RC-G = Rogers and Callcott, 426 Fairforest Way, Greenville, SC 29607 / SC Lab ID 23105
RC-C = Rogers and Callcott, 215B Stoneridge Drive, Columbia, SC 29210 / SC Lab ID 40572



Rogers & Callcott
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Mailing Address: PO Box 5655 Greenville, SC 29606 Phone (864) 232-1556
Shipping Address: 426 Fairforest Way Greenville, SC 29607 Phone (864) 232-6140

Client Name: Woolpert - City of Columbia
Address: 2000 Center Point Road Suite 2200 Columbia, SC 29210
Report To: Michael Long
Email Address: Michael.long@woolpert.com
Telephone #: 803-214-5936
PO #: _____ Project # Water Quality Testing

CHAIN OF CUSTODY RECORD

WORK ORDER

9061110

R & C WORK ORDER	YR 19 DATE	TIME	SAMPLE DESCRIPTION	Total Number of Containers	Parameter(s) ↑	N	Y	N	Y	Filtered (Yes/No)	Cooled (Yes/No)	Container Type (Plastic/Glass)	Container Volume (mL)	Sample Type (Grab/Composite)	Sample Source (WW, GW, DW, SW, S, Other)	Preservation Code(s)	COMMENTS
-02	6-21	0920	DHEC C-017 (Gills Creek @ Bluff Road)	1	TSS											A - None E - HCl F - Na ₂ S ₂ O ₃ G - Boric Acid H - Ascorbic Acid	D.O.- 5.20 mg/L
-02	6-21	0920	DHEC C-017 (Gills Creek @ Bluff Road)	1	F. Coli											B - HNO ₃ C - H ₂ SO ₄ D - NaOH	Temp- 25.4 °C
																I - Zn Acetate J - H ₃ PO ₄ K - NaH ₂ PO ₄ L - NH ₄ Cl	Collected @ 0923
																	Analyzed @ 0925
																	Weather- Sunny
																	84°F

RECEIVED BY: [Signature] DATE/TIME: 6-21-19 1050

RECEIVED BY: _____ DATE/TIME: _____

RECEIVED BY: _____ DATE/TIME: _____

RECEIVED BY: _____ DATE/TIME: _____

RECEIVED BY: _____ DATE/TIME: _____

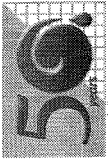
RECEIVED BY: _____ DATE/TIME: _____

RECEIVED BY: _____ DATE/TIME: _____

RECEIVED BY: _____ DATE/TIME: _____

Temperature of blank or representative sample _____ °C
At time of collection _____ °C
At time of lab receipt 5.2 °C

Form Revised March, 2019 Page _____ of _____



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Mailing Address: PO Box 5655 Greenville, SC 29606
Phone (864) 232-1556

Shipping Address: 426 Fairforest Way Greenville, SC 29607
Phone (864) 232-6140

215B Stoneridge Drive Columbia, SC 29210
Phone (803) 509-8999

Client Name: Woolpert - City of Columbia

Address: 2000 Center Point Road Suite 2200 Columbia, SC 29210

Report To: Michael Long

Email Address: Michael.Long@woolpert.com

Telephone #: 803-214-5936

Project # Water Quality Testing

PO #

CHAIN OF CUSTODY RECORD

WORK ORDER

906110

Parameter(s) ↑	Total Number of Containers	Filtered (Yes/No)	Cooled (Yes/No)	Container Type (Plastic/Glass)	Container Volume (mL)	Sample Type (Grab/Composite)	Sample Source (WW, GW, DW, SW, S, Other)	Preservation Code(s)
TSS	1	N	Y	P	1.20	G	WW	A - None E - HCl I - Zn Acetate B - HNO ₃ F - Na ₂ S ₂ O ₃ J - H ₃ PO ₄ C - H ₂ SO ₄ G - Boric Acid K - NaH ₂ PO ₄ D - NaOH H - Ascorbic Acid L - NH ₄ Cl
		N	Y	P		G	WW	
F. Coli	1	N	Y	P		G	WW	
		N	Y	P		G	WW	
		N	Y	P		G	WW	

R & C WORK ORDER	YR / DATE	TIME	SAMPLE DESCRIPTION	DATE/TIME	RECEIVED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	RECEIVED BY:
-04	6-21	0947	DHEC C-001 (Gillis Creek @ Garners Ferry Rd)	6-21-19 10:50	<i>[Signature]</i>	6-21-19 10:50	<i>[Signature]</i>	6-21-19 10:50	<i>[Signature]</i>	6-21-19 10:50	<i>[Signature]</i>
-04	6-21	0947	DHEC C-001 (Gillis Creek @ Garners Ferry Rd)								

D.O. - 7.04 mg/L
Temp - 27.6 °C
Collected @ 0949
Analyzed @ 0950
Weather - Sunny
84°F



Mailing: PO Box 5655
Address: Greenville, SC 29606
Phone (864) 232-1556

Shipping: 426 Fairforest Way
Address: Columbia, SC 29210
Phone (803) 509-8999

Client Name: Woolpert - City of Columbia

Address: 2000 Center Point Road Suite 2200

Columbia, SC 29210

Report To: Michael Long

Email Address: Michael.long@woolpert.com

Telephone # 803-214-5936

Project # Water Quality Testing

PO # _____

CHAIN OF CUSTODY RECORD

WORK ORDER

906110

Filtered (Yes/No)					
Cooled (Yes/No)					
Container Type (Plastic/Glass)					
Container Volume (mL)					
Sample Type (Grab/Composite)					
Sample Source (WW, GW, DW, SW, S, Other)					

TSS	F. Coli	Parameter(s) ↓		
		Total Number of Containers	1	
		D.O.-	6.78	mg/L
		Temp-	24.0	°C

Collected @	1029
Analyzed @	1029
Weather-	Sunny 84°F

COMMENTS	

- Preservation Code(s)
- | | | |
|------------------------------------|---|--------------------------------------|
| A - None | E - HCl | I - Zn Acetate |
| B - HNO ₃ | F - Na ₂ S ₂ O ₃ | J - H ₃ PO ₄ |
| C - H ₂ SO ₄ | G - Boric Acid | K - NaH ₂ PO ₄ |
| D - NaOH | H - Ascorbic Acid | L - NH ₄ Cl |

R & C WORK ORDER	YR/MO DATE	TIME	SAMPLE DESCRIPTION	RECEIVED BY:	DATE/TIME:
-06	6-21	1028	DHEC B-280 (Smith Branch @ N. Main St)	2. [Signature]	6-21-19 1050
-06	6-21	1028	DHEC B-280 (Smith Branch @ N. Main St)		

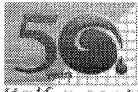
SAMPLER - RELINQUISHED BY:	1. [Signature]	RECEIVED BY:	2. [Signature]
RELINQUISHED BY:		RECEIVED BY:	4. [Signature]
RELINQUISHED BY:		RECEIVED BY:	6. [Signature]
RELINQUISHED BY:		RECEIVED BY:	8. [Signature]

Composite Start Date/Time: _____

Composite End Date/Time: _____

Time or Flow (Circle one) Initials: _____

Temperature of blank or representative sample
At time of collection _____ °C
At time of lab receipt 5.2 °C



Sample Receipt Verification

Client: Woolpert Columbia Date Received: 6-21-19 Work Order: 9061110

Carrier Name: Client FedEx UPS US Mail Courier Field Services Other: _____
Tracking Number: _____

Carrier Name: Client FedEx UPS US Mail Courier Field Services Other: _____
Tracking Number: NA

Receipt Criteria	Y e s	No	N A	Comments
Shipping container / cooler intact?	<input checked="" type="checkbox"/>			Damaged Leaking Other:
Custody seals intact?			<input checked="" type="checkbox"/>	
COC included with samples?	<input checked="" type="checkbox"/>			
COC signed when relinquished and received?	<input checked="" type="checkbox"/>			
Sample bottles intact?	<input checked="" type="checkbox"/>			Damaged Leaking Other:
Sample ID on COC agree with label on bottle(s)?	<input checked="" type="checkbox"/>			
Date / time on COC agree with label on bottle(s)?	<input checked="" type="checkbox"/>			
Number of bottles on COC agrees with number of bottles received?	<input checked="" type="checkbox"/>			
Samples received within holding time?	<input checked="" type="checkbox"/>			
Sample volume sufficient for analysis?	<input checked="" type="checkbox"/>			
VOA vials free of headspace (<6mm bubble)?			<input checked="" type="checkbox"/>	
Samples requiring pH preservation at proper pH? Note: Samples for metals analysis may be preserved upon receipt in the lab. Note: Samples for O&G and VOA analysis – preservation checked at bench.			<input checked="" type="checkbox"/>	
Samples dechlorinated for parameters requiring chlorine removal at the time of sample collection? Note: Chlorine checked at bench for samples requiring Bacterial, VOA, and HAA analysis.	<input checked="" type="checkbox"/>			
Samples cooled when received in Columbia ?	Temp at time of receipt <u>5.2</u> °C Temp measured with IR SN: 36301069WS	<input checked="" type="checkbox"/>		<u>Ice</u> Cold Packs Dry Ice None
Samples cooled when received in Greenville ?	Temp at time of receipt <u>NA</u> °C Temp measured with IR SN: 97050067			Ice Cold Packs Dry Ice None

If in-house preservation used – record Lot #			
HCL		H ₃ PO ₄	
H ₂ SO ₄		NaOH	
HNO ₃		Other	

Comments:

Were non-conformance issues noted at initial sample receipt? Yes or No

Non-Conformance issue other than noted above:

Note: Samples received initially in Columbia Facility. Sample preservation checks performed at Columbia Facility. Revised March 2019

Completed by: MJT