Clean Water 2020 Program

CONSENT DECREE QUARTERLY REPORT

January 1, 2019 – March 31, 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):

- 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.

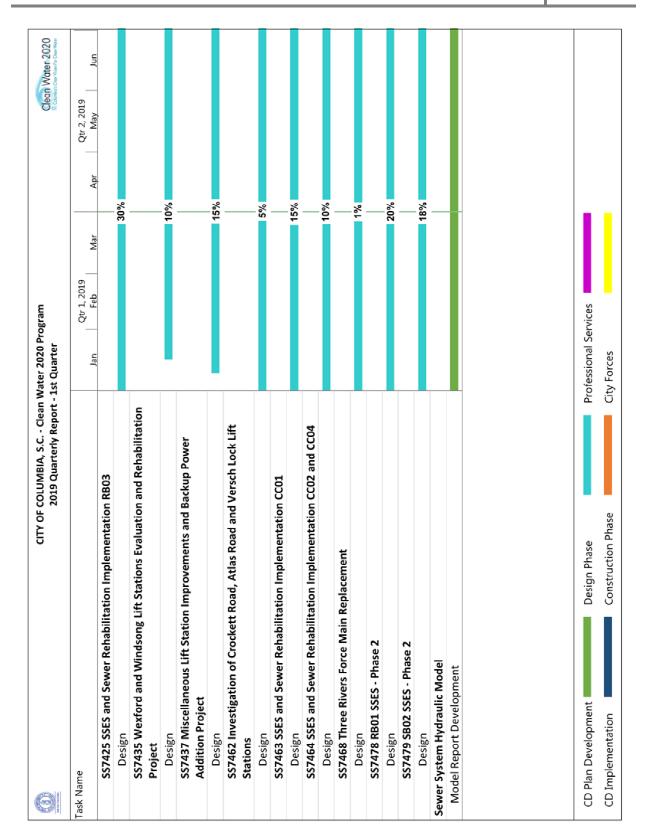
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Clean Water 2020 © Clandor Can factor Can Mar	Qtr 2, 2019 Apr Mav Jun	-						%		%		6 State 1 Stat		99							9								2			
later 2020 Program Ist Quarter	Qtr 1, 2019 Jan Feb Mar	2		89%		Í		78%		86%		73%		80%							98%		-		886				45%		Professional Services	City Forces
CITY OF COLUMBIA, S.C Clean Water 2020 Program 2019 Quarterly Report - 1st Quarter	Task Name	MOM Programs	Information Management System (IMS) Program	IMS Program Implementation	Capacity Assurance Program (CAP)	CAP CD Plan Development	Sewer Mapping Program (SMP)	SMP Implementation	Transmission System Operations and Maintenance Program (TSOMP)	TSOMP Implementation	Gravity Sewer System Operation and Maintenance Program (GSOMP)	GSOMP Implementation	Continuing Sewer Assessment Program (CSAP) for the WCTS	CSAP Implementation	Assessment of Major Components of CSAP	Assessment of Minor Components of CSAP	Infrastructure Rehabilitation Report (IRR) for the WCTS	IRR CD Plan Development	Infrastructure Rehabilitation Projects	SS725802 Greenlawn Dr. to Burnside #1 PS (Hampton Forest) Phase 2	Design	SS7261 Lake Katherine Sewer Line Capacity Enhancement	Construction	SS7289 Rivermont Drive Pump Station and Force Main	Design	SS7301 Bull Street	Construction	SS7330 Upper Mill Creek Sewer Improvements	Design		CD Plan Development Design Phase Pro	CD Implementation Construction Phase City

Task Name	Qtr 1, 2019 Qtr 2, 2019 Jun Jan Feb Mar Apr Mav Jun
SS7331 Upper Kinley Creek Sewer Improvements Ph. 1	
Design	90%
SS733701 East Rocky Branch Improvements Ph. 1	
Design	95%
SS733702 East Rocky Branch Improvements Ph. 2	
Design	90%
SS735002 Crane Creek Upper North Branch Extension	
Design	95%
SS735003 Crane Creek Lower North Branch Capacity Upgrade Phase 1	
Design	90%
SS7389 Crane Creek and Smith Branch Manhole Repair and Mitigation	
Construction	80%
SS7428 Lower Saluda Relief Sewer and Major Pipe Rehabilitation	
Design	35%
SS7433 Cunningham Rd, Johnson, Cramer Dr, Summerlea Dr	
Design	30%
SS7450 Crane Creek Lower North Branch Capacity Upgrade Phase 2	
Design	5%
SS7454 Broad River Force Main Replacement and Gravity Sewer Capacity	
Improvements	
Design	20%
SS7465 Lower Crane Creek Relief Sewer Phase 2	
Design	%0
SS7466 Lower Rocky Branch Relief Sewer Phase 1	
Design	25%
SS7467 North Columbia Pump Station Upgrade	
Design	10%
SS7470 Lower Crane Creek Relief Sewer Phase 1	
Design	5%
CD Plan Development Design Phase Prov	Professional Services
CD Implementation Construction Phase	City, Foresse

Consent Decree Quarterly Report 2019 Q1

and the second se	2019 Quarterly Report - 1st Quarter	2019 Quarterly Report - 1st Quarter	© Calendo's Crea Vision for Clean Water
Task Name		Qtr 1, 2019 Ian Feb Mar	Qtr 2, 2019 Anr May Iun
SS7474 Upper North Branch and North Richland Crane Creek Sewer	chland Crane Creek Sewer	-	2
Design			
Supplemental IR Report			
Additional Infrastructure Rehabilitation Projects	rojects		
SS6786 Annual Sanitary Sewer Manhole Rehabilitation - 2019	e Rehabilitation - 2019		
Construction		31%	
SS6857 Olympia Subdivision Sewer Syste Rehabilitation	er System Evaluation Survey (SSES) and		
Design		75%	
SS6966 Annual Rehab on Lines less than	ss than 15" - 2019		
Construction		10%	
SS7172 Rehabilitation/Replacement Harbison #2, Mallard Point and Animal	rbison #2, Mallard Point and Animal		
Shelter PS			
Construction		40%	
SS7208 Saluda River Basin SSES and Rehabilitation for SR-03, 10, & 12	abilitation for SR-03, 10, & 12		
Construction		%66	
SS7279 Smith Branch-02 SSES and Rehab	d Rehabilitation		
Construction		100%	
SS7280 Rocky Branch-01 SSES and Rehabilitation	bilitation		
Construction		98%	
SS7323 Food Lion PS Improvements			
Design		95%	
SS7362 Smith Branch 01 SSES			
Construction		62%	
SS7363 Smith Branch 03 SSES			
Construction		5%	
SS7424 SSES and Sewer Rehabilitation Implementation BR02	mplementation BR02		
Design		20%	
CD Plan Development	Design Phase Profe	Professional Services	

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Consent Decree Quarterly Report 2019 Q1

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 86% complete
 - Saluda River Basin 88% complete
 - Rocky Branch Basin 49% complete
 - o 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 80% 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 GSOMP was revised in early 2019 to establish procedures related to inverted siphons and to update Key Performance Indicators tracked by the City.
- The 30 day EPA mandated public comment period for the revised GSOMP began on March 25, 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 95% Complete
- Major Pump Stations Condition Assessment 95% Complete
- Major Force Mains Field Assessment 95% Complete

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 48% Complete
- Minor Pump Stations Condition Assessment 48% Complete
- Minor Force Mains Field Assessment 48% 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 45% 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 80% Complete
- SS7428 Lower Saluda Relief Sewer and Major Pipe Rehabilitation Design 35% Complete
- SS7433 Cunningham Rd, Johnson, Cramer Dr, Summerlea Dr Design 30% Complete
- SS7450 Crane Creek Lower North Branch Capacity Upgrade Phase 2 Design 5% Complete
- SS7454 Broad River Force Main Replacement and Gravity Sewer Capacity Improvements Design 20% Complete
- SS7465 Lower Crane Creek Relief Sewer Phase 2 Design 0% Complete
- SS7466 Lower Rocky Branch Relief Sewer Phase 1 Design 25% Complete
- SS7467 North Columbia Pump Station Upgrade Design 10% Complete
- SS7470 Lower Crane Creek Relief Sewer Phase 1 Design 5% Complete
- SS7474 Upper North Branch and North Richland 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 Sanitary Sewer Manhole Rehabilitation 2019 Construction 31% Complete
- SS6857 Olympia Subdivision Sewer System Evaluation Survey (SSES) and Rehabilitation Design 75% Complete
- SS6966 Annual Rehab on Lines less than 15" 2019 Construction 10% Complete
- SS7172 Rehabilitation/Replacement Harbison #2, Mallard Point and Animal Shelter PS Construction 40% Complete
- SS7208 Saluda River Basin SSES and Rehabilitation for SR-03, 10, & 12 Construction 99% Complete
- SS7279 Smith Branch-02 SSES and Rehabilitation Construction 100% 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 62% Complete
- SS7363 Smith Branch 03 SSES Construction 5% Complete
- SS7424 SSES and Sewer Rehabilitation Implementation BR02 Design 20% Complete
- SS7425 SSES and Sewer Rehabilitation Implementation RB03 Design 30% Complete
- SS7435 Wexford and Windsong Lift Stations Evaluation and Rehabilitation Project Design 10% Complete
- SS7437 Miscellaneous Lift Station Improvements and Backup Power Addition Project Design 15% Complete
- SS7462 Investigation of Crockett Road, Atlas Road and Versch Lock Lift Stations Design 5% Complete
- SS7463 SSES and Sewer Rehabilitation Implementation CC01 Design 15% Complete
- SS7464 SSES and Sewer Rehabilitation Implementation CC02 and CC04 Design 10% 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 18% 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 January 24, 2019, construction is 100% complete for the MLK Detention Project, which will meet the SEP Phase II requirements for Rocky Branch.

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.

					-	olumbia, SC			
						y SSO Listing arter 2019	3		
SSO Date	SSO Time	Location	Source	Date of Corrective Action	Time of Corrective Action	Estimated Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken
1/5/2019	12:09	212 TS Martin Dr, Columbia, SC 29204	Manhole	1/5/2019	12:15	1,825		Grease	Washed Main Line 150 Feet To Remove Stoppage. Main Line Wash To Remove Grease.
1/6/2019	17:38	1201 Bailey St, Columbia, SC 29203	Manhole	1/6/2019	18:00	3,993	Smith Branch Tributary	Grease	Washed Main Line 300 Feet. Removed Stoppage.
1/7/2019	14:20	7904 Trailwood Ln, Columbia, SC 29209	Manhole	тв	D	54		Collapsed Line	Washed Main Line 150 Feet, Removed Stoppage. CIPP Point Repair.
1/7/2019	19:07	828 Laurel Hill Ln, Columbia, SC 29201	Manhole	TB	D	1,110	Storm Drain	Collapsed Line	Jetted Main Line; Set Up Bypass Pump. Main Line Repairs.
1/7/2019		6509 Easter St, Columbia, SC 29203	Cleanout	1/7/2019	09:30	30		Debris	Removed Stoppage To Resume Normal Flow. Washed Service Line 45 Feet To Remove Stoppage.
1/8/2019	18:13	915 Rolling View Ln, Columbia, SC 29210	Cleanout	1/8/2019	18:50	259	Creek	Roots	Removed Stoppage To Resume Normal Flow. Tap Renewal/Root Removal.
1/8/2019	14:25	314 Hilltop Pl, Columbia, SC 29203	Other	1/14/2019	TBD	4,568		Collapsed Line	Washed Main Line 275 Feet To Get Stoppage Down. Main Line Repair.
1/9/2019	13:10	1241 Assembly St, Columbia, SC 29201	Cleanout	1/9/2019	13:30	10		Debris	Washed Service Line 20 Feet. Removed Stoppage.
1/9/2019	20:10	2108 Georgia Elam Ln, Columbia, SC 29204	Cleanout	1/14/2019	09:45	15		Roots	Removed Stoppage To Resume Normal Flow. Service Line Repair.
1/10/2019	12:00	1540 Frye Rd, Columbia, SC 29203	Manhole	1/15/2019	12:00	720		Roots	Washed Main Line 475 Feet. Heavy Main Line Washing To Remove Roots.
1/11/2019	14:00	2221 Devine St, Columbia, SC 29205	Manhole	TB	D	600	Storm Drain	Roots	Removed Stoppage To Resume Normal Flow. Run Root Cutter Through Lateral Line To Remove Roots.
1/14/2019	10:00	401 Harbison Blvd, Columbia SC 29212	Manhole	1/14/2019	12:40	1,200	Tributary To Kinley Creek	Roots	Washed Main Line 150 Feet To Remove Stoppage And Resume Normal Flow. Main Line Repair.
1/16/2019	09:00	1540 Frye Rd, Columbia, SC 29203	Manhole	TB	D	2,876		Roots	Washed Main Line 1152 Feet; Removed Multiple Stoppages. Repair In Design Phase To Reroute The Line.
1/16/2019	21:45	401 Bridle Trl, Columbia, SC 29203	Cleanout	ТВ	D	10		Roots	Washed Service Line 15 Feet And Removed Stoppage. Service Line Root Cut.
1/17/2019	13:15	4805 Barrington Dr, Columbia, SC 29203	Cleanout	1/17/2019	15:00	15	Drainage Ditch	Collapsed Line	Service Line Repair.
1/21/2019	14:20	830 Gracern Rd, Columbia, SC 29210	Manhole	1/22/2019	12:00	4,487	Storm Drain	Grease	Removed Stoppage To Resume Normal Flow. Main Line Wash To Remove Grease.
1/23/2019	11:10	2204 N Lake Dr, Columbia, SC 29212	Manhole	1/23/2019	11:10	70,404		Debris	Removed Stoppage To Resume Normal Flow. Washed Main Line 500 Feet, Stoppage Removed.
1/24/2019	14:04	3300 Park St, Columbia, SC 20201	Manhole	1/24/2019	14:15	650	Storm Drain	Debris	Removed Debris Blocking Bypass Discharge Hose.
1/25/2019	12:40	3000 Harden St, Columbia, SC 29203	Cleanout	1/25/2019	12:40	30		Debris	Washed Main Line To Remove Debris And Resume Normal Flow.
1/25/2019	14:50	108 Crestmore Dr, Columbia, SC 29209	Cleanout	ТВ	D	100		Collapsed Line	Removed Stoppage To Resume Normal Flow. Service Line Repair.
1/30/2019	11:45	3411 Deerfield Dr, Columbia, SC 29204	Cleanout	1/30/2019	12:00	40		Collapsed Line	Washed Service Line 40 Feet, Removed Stoppage. Service Line Repair.
2/1/2019	08:40	1004 Craven St, Columbia, SC 29203	Manhole	тв	D	1,534	Storm Drain	Roots	Removed Roots From Manhole To Resume Normal Flow. Manhole Clean To Remove Root Ball.
2/1/2019	14:52	3638 Falling Springs Rd, Columbia, SC 29203	Manhole	тв	D	20	Storm Drain	Roots	Jetted 300 Feet - Stoppage Removed. Main Line Repair.
2/4/2019	N/A	1200 Simmon Tree Lane, Columbia, SC 29201	Manhole	2/4/2019	05:00	450	Storm Drain	Treatment Plant	Raised Trough And Resecured It.

Table 1 - SSO Report, 1st Quarter 2019

City of Columbia, SC											
					Quarterl	y SSO Listing					
				Date of	1st Qu Time of	arter 2019 Estimated					
SSO Date	SSO Time	Location	Source	Corrective Action	Corrective Action	Volume (gallons)	Receiving Water (if any)	Cause	Actions Taken		
2/6/2019	19:17	3900 Bentley Dr, Columbia, SC 29210	Manhole	тв	D	582	Tributary To Broad River	Collapsed Line	Jetted Main Line 165 Feet, Removed Stoppage To Resume Normal Flow. Main Line Repair.		
2/7/2019	15:00	9519 Farrow Rd, Columbia, SC 29203	Cleanout	2/7/2019	15:21	21		Debris	Removed Stoppage To Resume Normal Flow. Washed Service Line 20 Feet, Removed Stoppage.		
2/8/2019	19:30	2025 Harden St, Columbia, SC 29204	Manhole	2/11/2019	09:00	3		Grease	Washed Main Line 150 Feet To Remove Stoppage. Main Line Wash To Remove Grease.		
2/9/2019	11:15	109 Stephenson Ln, Columbia, SC 29212	Cleanout	2/9/2019	11:30	24	Storm Drain	Debris	Washed Service Line 20 Feet To Remove Stoppage.		
2/9/2019	14:40	209 Palm Lake Dr, Columbia, SC 29212	Manhole	TBI	D	70		Debris	Removed Stoppage To Resume Normal Flow. Clean Out Debris From Manhole And Around Casting/Lid.		
2/9/2019	20:00	7921 Teague Rd, Columbia, SC 29209	Manhole	2/9/2019	21:00	120		Roots	Removed Stoppage To Resume Normal Flow. Remove Roots From Manhole And Main Line.		
2/13/2019	18:27	5120 Brickyard Rd, Columbia, SC 29203	Manhole	2/14/2019	12:00	7,650	Unnamed Creek	Debris	Removed Stoppage To Resume Normal Flow. Cleaned Debris Out Of Manhole.		
2/21/2019	11:00	230 Bush River Rd, Columbia, SC 29210	Manhole	2/21/2019	12:00	3,000	Drainage Ditch	Debris	Washed Main Line 300 Feet To Resume Normal Flow. Removed Debris (Contractor Bag) From Manhole.		
3/3/2019	14:39	109 Stephenson Ln, Columbia, SC 29212	Cleanout	тв	D	375	Unnamed Tributary To Koon Branch	Roots	Washed Main Line 250 Feet To Remove Stoppage. Main Line Repair.		
3/4/2019	15:00	1600 Garner Ln, Columbia, SC 29210 2119 Marley Dr, Columbia, SC 29210	Manhole	TBI	D	122,833	Broad River	3rd Party Responsibility	Manually Opened The Discharge Valves And Restarted The Pumps. Requesting Utility Power Company To Monitor Incoming Power Supply Issues.		
3/6/2019	18:35	275 Hillsborough St, Columbia, SC 29212	Manhole	3/6/2019	18:49	262		Grease	Jetted Main Line 350 Feet To Remove Stoppage And Resume Normal Flow.		
3/6/2019	12:30	6530 Davidson St, Columbia, SC 29209	Manhole	3/8/2019	10:00	500		Roots	Washed Main Line To Remove Stoppage And Resume Normal Flow. Main Line Root Cut.		
3/7/2019	14:24	6530 Davidson St, Columbia, SC 29209	Manhole	3/8/2019	TBD	37		Roots	Washed Main Line To Resume Normal Flow. Main Line Root Cut.		
3/8/2019	11:25	1709 Lake Murray Blvd, Columbia, SC 29212	Manhole	3/8/2019	16:30	90		Debris	Washed Main Line To Resume Normal Flow. Main Line Washed 377 Feet, Stoppage Removed.		
3/8/2019	09:45	3247 Lucius Rd, Columbia, SC 20201	Other	3/8/2019	16:00	50		Equipment Failure	Turned Off Ball Valves Located On The ARVs To Stop The Leak. Installed Hoses To The ARVs To Direct The Leakage Back To The Wet Well At The Lift Station.		
3/10/2019	20:00	7921 Teague Rd, Columbia, SC 29209	Cleanout	3/12/2019	TBD	15		Roots	Service Line Wash From Tap In Manhole. Service Line Root Cut.		
3/11/2019	10:50	6530 Davidson St, Columbia, SC 29209	Manhole	3/11/2019	10:50	600		Collapsed Line	Washed Main Line 100 Feet To Remove Stoppage.		
3/11/2019	17:20	515 Richland St, Columbia, SC 29201	Cleanout	3/12/2019	11:00	9		Collapsed Line	Washed Service Line 35 Feet To Remove Stoppage. Service Line Repair.		
3/12/2019	18:00	1319 Hancock St, Columbia, SC 29205	Manhole	ты	D	24		Roots	Washed Main Line 200 Feet To Remove Stoppage And Resume Normal Flow. Main Line Repair And Tap Renewal.		
3/12/2019	21:50	112 Shetford Rd, Irmo, SC 29063	Cleanout	3/18/2019	TBD	6		Roots	Washed Service Line 15 Feet From City Cleanout. Service Line Repair.		
3/13/2019	13:50	120 Atlas Ct, Columbia, SC 29209	Other	3/14/2019	10:00	884	Storm Drain	Collapsed Line	Washed Main Line 290 Feet And Removed Stoppage. Main Line Repair.		
3/13/2019	09:00	22 Thistle Ct, Irmo, SC 29063	Cleanout	3/13/2019	16:30	383	Swygert Branch	Pump Station Failure	Bypassed Bad Phase Monitor At Pump Station #145 To Get Station Back On Line. Replaced Phase Monitor.		
3/14/2019	12:30	908 Woodland Dr, Columbia, SC 29205	Cleanout	3/14/2019	12:50	30		Debris	Washed City Service Line 40 Feet. Service Line Wash.		
3/15/2019	17:15	2346 Two Notch Rd, Columbia, SC 29204	Manhole	3/18/2019	TBD	9		Roots	Washed Main Line 250 Feet. Main Line Repair.		
3/26/2019	08:30	815 King St, Columbia, SC 29205	Manhole	ТВІ	D	80		Debris	Removed Stoppage To Resume Normal Flow. Rerouting Service Lines For 815 And 819 King St To The Main Line On King St.		

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 Q1 was completed on January 29, 2019, February 27, 2019, and April 1, 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: 1/29/19

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

drea Bolling

Project Verifier/QA Manager

Date

Andrea Bolling

Printed Name

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

Project Manager/Project Validator

Date

AJ Jessee

Printed Name



ANALYTICAL REPORT

CLIENT:

City of Columbia 1136 Washington Street Columbia, SC 29201

PROJECT:

WATER QUALITY MONITORING

REPORT DATE:

01.29.19

REPORT APPROVED BY:

Bryant W. Boyd Laboratory Manager bryant@axs-inc.com

Any questions related to this report should be directed to Access Analytical, Inc. via phone at 803.781.4243 or via email at the address listed above.

Access Analytical, Inc. SCDHEC certification #: 32571001 (Irmo Lab)

Access Analytical, Inc. 15 Thames Valley Rd. ~ Irmo, SC 29063 PHONE: 803.781.4243 ~ FAX: 803.781.4303 ~ WEB: www.axs-inc.com



Lab ID #:	17228-001	Matrix:	Waste Water
Project:	WATER QUALITY MONITORING	Collected:	1/24/2019 @ 13:30
Sample Name:	C-017	Date Received:	1/24/2019 @ 15:08

Parameter	Result	Reporting Limit	Units	Method Reference	Data Flag	Date/Time of Analysis	Analyst
DO	9.78	None	mg/L	SM 4500-O G-2011		1/24/2019 13:30	JRS
E. Coli (MPN)	791.5	1	MPN	SM 9223 B-2004		1/24/2019 15:52	MML
Temperature	13.3	None	oC	SM 2550B-2010		1/24/2019 13:30	JRS
TSS	21.7	1	mg/L	SM 2540 D-2011		1/24/2019 11:25	RDA



Lab ID #:	17228-002	Matrix:	Waste Water
Project:	WATER QUALITY MONITORING	Collected:	1/24/2019 @ 14:01
Sample Name:	C-001	Date Received:	1/24/2019 @ 15:08

Parameter	Result	Reporting Limit	Units	Method Reference	Data Flag	Date/Time of Analysis	Analyst
DO	11.42	None	mg/L	SM 4500-O G-2011		1/24/2019 14:01	JRS
E. Coli (MPN)	866.4	1	MPN	SM 9223 B-2004		1/24/2019 15:52	MML
Temperature	12.1	None	oC	SM 2550B-2010		1/24/2019 14:01	JRS
TSS	20.3	1	mg/L	SM 2540 D-2011		1/24/2019 11:25	RDA



Lab ID #:	17228-003	Matrix:	Waste Water
Project:	WATER QUALITY MONITORING	Collected:	1/24/2019 @ 14:32
Sample Name:	B-280	Date Received:	1/24/2019 @ 15:08

Parameter	Result	Reporting Limit	Units	Method Reference	Data Flag	Date/Time of Analysis	Analyst
DO	10.20	None	mg/L	SM 4500-O G-2011		1/24/2019 14:32	JRS
E. Coli (MPN)	1732.9	1	MPN	SM 9223 B-2004		1/24/2019 15:52	MML
Temperature	14.7	None	oC	SM 2550B-2010		1/24/2019 14:32	JRS
TSS	22.3	1	mg/L	SM 2540 D-2011		1/24/2019 11:25	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
МІ	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.



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



Access Sub Lat	Access Lab Report #: 1フンチ る Sub Lab (if applicable): / Sub Report #:	ort #:		6 ⁻		Access B-D Analytical, Inc.		ical, Inc. – illey Rd. ~1 781-4243 / Certification	Irmo rmo, SC 290 Fax: 803-78 1# 32571	Access Analytical, Inc. – Irmo B. Thames Valley Rd. – Irmo SC 29063 Phone: 803-781-4243 / Fax: 803-781-4303 / Web: <u>www.axs-inc.com</u> SCDHEC Lab Certification # 32571	inc.com	Chain of C	Chain of Custody Record	
Client:	City of Columbia					Preserve	Preservatives (see codes):	-	9 5 N	NA NA	*Preservative Codes:	Preservation Co	Preservation Codes / Bottle Types:	1
Attn:	AJ Jessee					Bottle T	Bottle Types (see codes):		P P N	NA	0 = None, 1 = H(0 + None)	.L, 2 = HNO3, 3 = H ₂ SO ₄ , 4 = 1, 7 = NaOH/ZnOAC, 8 = H ₃	0 = None, 1 = HCL, 2 = HNO3, 3 = H ₂ SO, 4 = NaOH, 5 = Na ₂ S ₂ O ₃ , 6 = Method 5035 set w/ NaHSO ₂ & CH ₃ OH, 7 = NaOH/ZhOAC, 8 = H ₃ PO ₄ , 9 = cooled to 56° C, 10 = cooled to 510° C,	
Address:	1136 Washington Street							1:			11 = Amm.Cl ⁻ , 1	11 = Amm.Cl ⁻ , 12 = Ascorbic Acid / HCL, 13 = EDA	= EDA	
City:	Columbia		S	State: S	SC Zip Code:		29201	SISA			*Matrix Codes: GW = ground wa	ter, WW = waste water, DV	*Matrix Codes: GW = ground water, WW = waste water, DW = drinking water, SW = surface/storm water,	. *
Phone:	803-454-3267	Fax:						IANA		əır	S = soil, SL = slud	ge, A = air, IW = industrial v	vaste, O = other (specify in comments section	~
Email:		alfred.	alfred.jessee@columbiasc.gov	columbia	asc.gov			8AJ		1121	CWA = Clean Water Ac	odes: ater Act (for wastewaters),	Program Area Codes: CUM = Clean Water Act (for wastewaters), SDWA = Safe Drinking Water Act (for drinking	50
Project Name:	nme:	Wate	Water Quality Monitoring	y Monit	toring			DETED		iədi	water), SHW = S	blid and Hazardous Wastes	water), SHW = Solid and Hazardous Wastes (for solis, ground waters and waste samples)	
Sampled B	ampled By (Signature):	den		1				GUES		цат	*Container Type:	: G = Glass, P = Plastic		
ab ID:	Sample Name:	Date Collected:	Time Collected:	ected: C=Comp	matrix rab (see omp codes)	Program Area (see codes)	Total # Containers	-	E' CC	. 'OO		Notes / 0	Notes / Comments	
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200	C-001	11	140		g WW	/ CWA	2	Containers er Test > >	1 1 N	NA	DO (mg/L)=	11:42	Temperature (°C)= 12.1	T
200	B-280	N	643	2	G WW	/ CWA	2	# Containers per Test > >	1 1 N	NA	DO (mg/L)=	(0.20 Tem	Temperature (°C)= (4, 7	
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							= G	Containers er Test > >						
							e C	a Containers ber Test > >						
							n û.	Containers er Test > >			**Samp	le the last week o	**Sample the last week of Jan, April, July & October	
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								# Containers per Test > >				- nd		
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Date/T	Date/Time Off:	by w	by whom:			I		Difference:	:nce:					
										×	(factor):	-		1
Turnard	Turnaround Time Requested:	Project Location:	ocation:		Relinqu	Relinquished By:			Rec	Received By:	Date:	Time (24hr):	Samples Received on Ice:	T
Standard		SC											YN/A	1
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	White Copy: Lab original / Canary Copy:	File Copy / Pink Copy: Client Copy	Copy: Clic	ent Copy		NOTE:	Relinquishin	g sample	s via this (Chain of Custody doc	ment constitutes clie	nt acceptance of Acces	NOTE: Relinquishing samples via this Chain of Custody document constitutes client acceptance of Access Analytical terms and conditions.	

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: 2/27/19

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

uchoa Bell

Project Verifier/QA Manager -

3819

Date

Andrea Bollina

Printed Name

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

me

Project Manager/Project Validator

3/8/19

Date

J JESSER

Printed Name



ANALYTICAL REPORT

CLIENT:

City of Columbia 1136 Washington Street Columbia, SC 29201

PROJECT:

WATER QUALITY MONITORING

REPORT DATE:

02.27.19

REPORT APPROVED BY:

Bryant W. Boyd Laboratory Manager bryant@axs-inc.com

Any questions related to this report should be directed to Access Analytical, Inc. via phone at 803.781.4243 or via email at the address listed above.

- South Carolina DHEC state lab certification #:
- Florida DOH national NELAP lab accreditation #:

32571001 E871145



Access Analytical, Inc. 15 Thames Valley Rd. ~ Irmo, SC 29063 PHONE: 803.781.4243 ~ FAX: 803.781.4303 ~ WEB: <u>www.axs-inc.com</u>



Lab ID #:	17817-001	Matrix:	Waste Water
Project:	WATER QUALITY MONITORING	Collected:	2/21/2019 @ 10:06
Sample Name:	C-017	Date Received:	2/21/2019 @ 14:52

Parameter	Result	Reporting Limit	Units	Method Reference	Data Flag	Date/Time of Analysis	Analyst
DO	10.28	None	mg/L	SM 4500-O G-2011		2/21/2019 10:06	JRS
E. Coli (MPN)	91.0	1	MPN	SM 9223 B-2004		2/21/2019 15:20	RDA
Temperature	9.9	None	oC	SM 2550B-2010		2/21/2019 10:06	JRS
TSS	2.3	1	mg/L	SM 2540 D-2011		2/22/2019 13:40	RDA



Lab ID #:	17817-002	Matrix:	Waste Water
Project:	WATER QUALITY MONITORING	Collected:	2/21/2019 @ 10:36
Sample Name:	C-001	Date Received:	2/21/2019 @ 14:52

Parameter	Result	Reporting Limit	Units	Method Reference	Data Flag	Date/Time of Analysis	Analyst
DO	10.13	None	mg/L	SM 4500-O G-2011		2/21/2019 10:36	JRS
E. Coli (MPN)	115.3	1	MPN	SM 9223 B-2004		2/21/2019 15:20	RDA
Temperature	10.9	None	oC	SM 2550B-2010		2/21/2019 10:36	JRS
TSS	6.7	1	mg/L	SM 2540 D-2011		2/22/2019 13:40	RDA



Lab ID #:	17817-003	Matrix:	Waste Water
Project:	WATER QUALITY MONITORING	Collected:	2/21/2019 @ 11:09
Sample Name:	B-280	Date Received:	2/21/2019 @ 14:52

Parameter	Result	Reporting Limit	Units	Method Reference	Data Flag	Date/Time of Analysis	Analyst
DO	10.47	None	mg/L	SM 4500-O G-2011		2/21/2019 11:09	JRS
E. Coli (MPN)	>2419.6	1	MPN	SM 9223 B-2004		2/21/2019 15:20	RDA
Temperature	11.8	None	oC	SM 2550B-2010		2/21/2019 11:09	JRS
TSS	15.3	1	mg/L	SM 2540 D-2011		2/21/2019 9:30	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.



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



Access Sub Lab	Access Lab Report #: [78]7 Sub Lab (If applicable): / Sub Report #:	t#:		•		Access Analytical, Inc.		tical, Inc alley Rd. ~ 781-4243 / Certificatio	Irmo Irmo, SC 29 Fax: 803-7 n # 32571	Access Analytical, Inc. – Irmo 21 Thannes Vulney Rd. – Irmo Phone: 803–834–434 / Fas: 803–511–4303 / Web: <u>www.asc-inc.com</u> SCDHEC Lab Certification # 32571	Eo	Chain o	Chain of Custody Record	
Client:	City of Columbia					Preserve	Preservatives (see codes):	100000	9 5 1	NA	*Preservative Codes:	Preservatio	Preservation Codes / Bottle Types:	T
Attn:	AJ Jessee					Bottle T	Bottle Types (see codes):	1000	P P	NA	0 = None, 1 = HC NaHSO ₄ & CH ₃ OF	L, 2 = HNO3, 3 = H ₂ SO I, 7 = NaOH/ZnOAC, 8	0 = None, 1 = HCL, 2 = HNO3, 3 = H ₂ SO, 4 = NaOH, 5 = Na ₂ S ₂ O ₃ , 6 = Method 5035 set w/ NaHSO ₄ & CH ₃ OH, 7 = NaOH/ZnOAC, 8 = H ₃ PO ₄ , 9 = cooled to 56°C, 10 = cooled to 510°C,	~
Address:	1136 Washington Street							1:			11 = Amm.Cl ⁻ , 1	2 = Ascorbic Acid / HC	11 = Amm.Cl ⁺ , 12 = Ascorbic Acid / HCl, 13 = EDA	8
City:	Columbia		Sta	State: SC	C Zip Code:		29201	SISY			*Matrix Codes: GW = ground wa	ter, WW = waste wate	*Matrix Codes: GW = ground water, WW = waste water, DW = drinking water, SW = surface/storm water,	Ľ.
Phone:	803-454-3267	Fax:						IANA		ILE	S = soil, SL = slud	ge, A = air, IW = indus	trial waste, O = other (specify in comments section	î
Email:		alfred.je	ssee@c	alfred.jessee@columbiasc.gov	SC. ROV			8AJ		nter	*Program Area Codes: CWA = Clean Water Ac	odes: iter Act (for wastewat	*Program Area Codes: CVA = Clean Water Act (for wastewaters), SDWA = Safe Drinking Water Act (for drinking	Bu
Project Name	me:	Water	Quality	Water Quality Monitoring	bring			DETED		ıədı	water), SHW = So	id and Hazardous Wo	astes (for soils, ground waters and waste samples)	~
Sampled B	Sampled By (Signature):	Car	1					GUES		melle	*Container Type:	: G = Glass, P = Plastic	tic	
Lab ID:	Sample Name:	Date Collected: 1	Time Collected:	G=Grab cted: C=Comp	b (see p codes)	Program Area (see codes)	Total # Containers		E. Co	. 'OO		Note	Notes / Comments	18100
100	C-017	2.2119	1001	9	MM 5	/ CWA	2	# Containers per Test > >	1 1	NA	DO (mg/L)= {0	28	Temperature (°C)= ? ?	<u> </u>
603	C-001	11	1036	9	MM	/ CWA	2	Containers er Test > >	1 1	NA	DO (mg/L)=	13	Temperature (°C)= 10.9	Г
003	B-280	ef.	1109	U	MM	/ CWA	2	# Containers per Test > >	1 1	NA	DO (mg/L)=	10.47	-	Г
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							* 4	Containers er Test > >			**Samp	le the last wee	**Sample the last week of Jan, April, July & October	<u> </u>
							* 6	# Containers per Test > >						<u> </u>
							* 4	# Containers per Test > >						<u> </u>
				\square			* 0	# Containers per Test > >				PU	٨-	
Auto Se	Auto Sampler Data (composite samples only): C	Composite Harvest Temp (°C)=	larvest	Temp (°C)=		T	Meter	Readin	Meter Reading After:				
Date/Ti	Date/Time Set On:	by whom:	:			1		Meter	Readin	Meter Reading Before:				
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										×	(factor):	-		
Turnaro	Turnaround Time Requested:	Project Location	ation:		Relinqu	Relinquished By:			Rec	Received By:	Date:	Time (24hr):	Samples Received on Ice:	
Standard		sc											YN/A	
Rush *		NC											Y N N/A	
*Date Required		Other (Spo	(Specify):										Y N N/A	1
Rush data em: is 7-10 busines	Rush data emailed/faxed by end of business day on date required. Standard TAT is 7-10 business days.	E.				0					2-2149	1452		
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2	White Copy: Lab original / Canary Copy: File	File Copy / Pink Copy: Client Copy	py: Clien	t Copy		NOTE:	Relinquishin	g sample	s via this	Chain of Custody docume	nt constitutes clie	nt acceptance of Ac	terms and to	1
														1

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: 4/1/19

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

diece fo

Project Verifier/QA Manager

19

Date

Andrea Bollina

Printed Name

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

Project Manager/Project Validator

4/5/19

Date

AJ Jessee

Printed Name



ANALYTICAL REPORT

CLIENT:

City of Columbia 1136 Washington Street Columbia, SC 29201

PROJECT:

WATER QUALITY ANALYSIS

REPORT DATE:

04.01.19

REPORT APPROVED BY:

Bryant W. Boyd Laboratory Manager bryant@axs-inc.com

Any questions related to this report should be directed to Access Analytical, Inc. via phone at 803.781.4243 or via email at the address listed above.

- South Carolina DHEC state lab certification #:

32571001 - Florida – DOH national NELAP lab accreditation #: E871145

Access Analytical, Inc. 15 Thames Valley Rd. ~ Irmo, SC 29063 PHONE: 803.781.4243 ~ FAX: 803.781.4303 ~ WEB: www.axs-inc.com



Lab ID #:	18512-001	Matrix:	Waste Water
Project:	WATER QUALITY ANALYSIS	Collected:	3/25/2019 @ 13:46
Sample Name:	C-017	Date Received:	3/25/2019 @ 15:20

Parameter	Result	Reporting Limit	Units	Method Reference	Data Flag	Date/Time of Analysis	Analyst
DO	7.81	None	mg/L	SM 4500-O G-2011		3/25/2019 13:46	JRS
E. Coli (MPN)	63.8	1	MPN	SM 9223 B-2004		3/25/2019 17:00	MML
Temperature	17.3	None	oC	SM 2550B-2010		3/25/2019 13:46	JRS
TSS	165	1	mg/L	SM 2540 D-2011		3/28/2019 11:20	RDA



Lab ID #:	18512-002	Matrix:	Waste Water
Project:	WATER QUALITY ANALYSIS	Collected:	3/25/2019 @ 14:20
Sample Name:	C-001	Date Received:	3/25/2019 @ 15:20

Parameter	Result	Reporting Limit	Units	Method Reference	Data Flag	Date/Time of Analysis	Analyst
DO	8.91	None	mg/L	SM 4500-O G-2011		3/25/2019 14:20	JRS
E. Coli (MPN)	146	1	MPN	SM 9223 B-2004		3/25/2019 17:00	MML
Temperature	17.0	None	oC	SM 2550B-2010		3/25/2019 14:20	JRS
TSS	12.0	1	mg/L	SM 2540 D-2011		3/28/2019 11:20	RDA



Lab ID #:	18512-003	Matrix:	Waste Water
Project:	WATER QUALITY ANALYSIS	Collected:	3/25/2019 @ 14:48
Sample Name:	B-280	Date Received:	3/25/2019 @ 15:20

Parameter	Result	Reporting Limit	Units	Method Reference	Data Flag	Date/Time of Analysis	Analyst
DO	9.78	None	mg/L	SM 4500-O G-2011		3/25/2019 14:48	JRS
E. Coli (MPN)	648.8	1	MPN	SM 9223 B-2004		3/25/2019 17:00	MML
Temperature	17.3	None	oC	SM 2550B-2010		3/25/2019 14:48	JRS
TSS	3.0	1	mg/L	SM 2540 D-2011		3/28/2019 11:20	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.



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



Access I Sub Lab	Access Lab Report #: 18512 Sub Lab (if applicable): / Sub Report #:	ort #:			ૢ૽	Access Analytical, Inc.		Access Analytical, Inc. – Irmo 15 Thames Valley Rd. ~ Irmo, Phone: 803-781-4243 / Fax: SCDHEC Lab Certification # 31	c. – Irmo 1. ~ Irmo, 43 / Fax: ation # 32	SC 29063 803-781-4 2571	Access Analytical, Inc. – Irmo 15 Thomes Valley Rd. – Irmo Phone: 803-581-434 / Fac: 803-581-4337 / Web: <u>www.ass-inc.com</u> SCDHEC Lab Certification # 3257	u	Chain o	Chain of Custody Record	
Client:	City of Columbia					Pre	Preservatives (see codes):	ee codes):	6	5 NA		*Preservative Codes:	Preservat odes:	Preservation Codes / Bottle Types:	
Attn:	AJ Jessee					Bo	Bottle Types (see codes):	se codes):	д	P NA		0 = None, 1 = H NaHSO ₄ & CH ₃ O	CL, 2 = HNO3, 3 = H ₂ S H, 7 = NaOH/ZnOAC,	0 = None, 1 = HCL, 2 = HNO3, 3 = H ₃ SO, 4 = NaOH, 5 = Na ₃ S ₃ O ₃ , 6 = Method 5035 set w/ NaHSO ₄ & CH ₃ OH, 7 = NaOH/ZnOAC, 8 = H ₃ PO ₄ , 9 = cooled to 56° C, 10 = cooled to 510° C.	set w/ s10°C,
Address:	1136 Washington Street							1				11 = Amm.Cl', 1	I2 = Ascorbic Acid / H	Cl, 13 = EDA	
City:	Columbia			State:	SC Zip	Zip Code:	29201	SISY.				*Matrix Codes: GW = ground w	ater, WW = waste wa	*Matrix Codes: GW = ground water, WW = waste water, DW = drinking water, SW = surface/storm water,	n water,
Phone:	803-454-3267	Fax:						IANA		۲6		S = soil, SL = slue	lge, A = air, IW = indu	S = soil, $SL = sludge$, $A = air$, $IW = industrial waste$, $O = other (specify in comments section)$	section)
Email:		alfred.	jessee@	alfred.jessee@columbiasc.gov	iasc.gov			RAJ		nter		*Program Area Codes: CWA = Clean Water Ac	Codes: ater Act (for wastewa	*Program Area Codes: CWA = Clean Water Act (for wastewaters), SDWA = Safe Drinking Water Act (for drinking	drinking
Project Name:	ne:	Wate	er Quali	Water Quality Monitoring	itoring			03T2		ıədı		water), SHW = 5	olid and Hazardous V	water), SHW = Solid and Hazardous Wastes (for soils, ground waters and waste samples)	mples)
Sampled By	Sampled By (Signature):	1. 2.						GUES	.1			*Container Type:	e: G = Glass, P = Plastic	stic	
Lab ID:	Sample Name:	Date Collected:	Time Collected:	100000000000000000000000000000000000000	G=Grab (see C=Comp codes)	rix Program Area es) (see codes)	n Area Total # des) Container:	ers	SST	DO'. E' Co			Not	Notes / Comments	
(0)	C-017	3-25-19	134	16	\$ 5	WW CV	CWA 2	# Containers per Test > >		1 NA		DO (mg/L)=	7.81	Temperature (°C)= 17.3	
200	C-001	í,	14	20	× ق	WW CV	CWA 2	# Containers per Test > >		1 NA		DO (mg/L)=	8.91	Temperature (°C)= 17.0	
0 03	B-280	h	14	48	\$ 5	WW CV	CWA 2	# Containers per Test > >	H	1 NA		DO (mg/L)=	9.70	Temperature (°C)= 17.3	
								# Containers per Test > >							
								# Containers per Test > >							
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					_			# Containers per Test > >							
								# Containers per Test > >							
								# Containers per Test > >						PW/	
Auto Sa	Auto Sampler Data (composite samples only):	Composite Harvest Temp (°C)=	Harves	it Temp	=()°			Met	ter Rea	Meter Reading After:	fter:				
Date/Tii	Date/Time Set On:	py w	by whom:			I		Met	ter Rea	Meter Reading Before:	efore:				
Date/Time Off:	me Off:	by w	by whom:					Diff	Difference:					25	
											×	(factor):			
Turnaro	furnaround Time Requested:	Project Location:	ocation:		Relind	Relinquished By:	By:			Receiv	Received By:	Date:	Time (24hr):	Samples Received on Ice:	
Standard		SC												N/N_N/A	
Rush *		NC												YN/A	
*Date Required		Other (3	(Specify):											N_N_N/A	
Rush data emailed/fi s 7-10 business days	ixed by end of business day on date required. Stand:	ard TAT			:		1	4				3-25-19	1520	N N/A	
Chair	Chain of Custody Page of			Keceiv	Keceived in lab by:	 :/a a	yara	and and	1			Sample Temp. Receipt in Lab:	1.2 100	Ref: RT1 Ref: RT2	
M	White Copy: Lab original / Canary Copy: File Copy / Pink Copy: Client Copy	'e Copy / Pink	Copy: Cli	ent Copy		N	DTE: Relingu	ishing sam	ples via	this Cha	in of Custody docume	ent constitutes clie	ant acceptance of /	NOTE: Relinquishing samples via this Chain of Custody document constitutes client acceptance of Access Analytical terms and conditions.	
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