Gills Creek Monitoring Sites Monitoring Data Summary for September 27th, 2018 – October 31st, 2018

Data Gaps

- The GILA and GILB stations did not have any interruptions in the data during this monitoring period.
- Turbidity data was removed from October 24th until the last day of the deployment period at the GILC station. When the sonde was removed for calibrations, it was noted that the turbidity sensor was covered in sediment, which caused inaccurate turbidity readings during this time.

SCDHEC Standards

- None of the Gills Creek stations recorded a pH reading outside of the acceptable SCDHEC range of 6 to 8.5.
- The GILA station recorded an average DO value of 7.9 mg/L, the GILB station recorded an average DO value of 7.0 mg/L, and the GILC station recorded an average DO value of 5.6 mg/L which are all above the SCDHEC daily average DO standard of 5 mg/L.
- During this deployment period, the GILA, GILB, and GILC stations recorded minimum DO levels of 6.4 mg/L, 3.5 mg/L, and 3.9 mg/L, respectively. The GILA station did not record any DO values below the SCDHEC instantaneous minimum standard of 4.0 mg/L; however, both the GILB and GILC stations did. The low DO values at GILB occurred during a significant increase in stage on October 8th, most likely caused by the release of flow from Lake Katherine. The low DO values at GILC occurred when the stage returned to normal baseflow conditions, several days after a large rain event.

Storm Events

- The GILA station recorded 6 storm events resulting in approximately 6.4 inches of rainfall. The GILB station recorded 8 storms that resulted in approximately 6.3 inches of rainfall. The GILC station recorded 6 storms that resulted in approximately 6.0 inches of rainfall.
- All monitoring stations experienced a large rain event, related to Hurricane Florence, that resulted in continuous precipitation from October 10th-11th.
- The water quality parameters in the Gills Creek watershed displayed typical storm event response patterns during the recorded storm events.
- The maximum antecedent dry time since the last significant precipitation event (at least 0.1 inches) was approximately 14.5 days, at all three of the Gills Creek monitoring sites, prior to the storm event on October 26th.

Potential Illicit Discharges and Abnormal Events

- At GILA, the specific conductivity increased during an abrupt stage decrease. This was likely due to activity upstream, related to Forest Lake.
- At GILB, specific conductivity decreased significantly on October 15th, which could have been the result of an illicit discharge.

Flow Measurements

• High flow measurements were taken at GILA and GILB on October 11th during the rain event associated with Hurricane Florence.





Gills Creek A (September 27, 2018 -- October 31, 2018)

		CONTINUOUS	SUMMARY STATISTICS					
PARAMETER	DESCRIPTION	WATER QUALITY PARAMETERS:	MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION	
STREAM NAME:	Gills Creek	STAGE (FT):	2.1	6.0	2.4	2.5	0.5	
LOCATION:	Forest Drive Bridge							
ADDRESS:	4840 Forest Drive, Columbia, SC 29206	TEMPERATURE (°F):	57	86	76	74	7	
COORDINATES:	34.019826, -80.963566	TURBIDITY (NTU):	3	376	8	12	25	
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen		Ū					
NEIGHBORING LANDUSE:	Residential and commercial	nH·	63	7.0	6.6	6.6	0.2	
APPROX. DRAINAGE AREA:	48 square miles	ρn.	0.0		0.0	0.0	0.2	
SPATIAL LOCATION:	Most upstream site	SPECIFIC						
TOTAL NO. STORMS OVER 0.1 INCH:	6	CONDUCTIVITY (mS/cm):	0.028	0.064	0.046	0.047	0.003	
MAX. DAILY RAINFALL:	3.1 inches	DISSOLVED						
TOTAL RAINFALL (FOR PERIOD):	6.4 inches	OXYGEN (mg/L):	6.4	9.7	7.8	7.9	0.7	











10/7

10/9

10/11

10/5

3 – 9/27

9/29

10/1

10/3

REPORT GENERATED ON 11/27/2018

10/15

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10/19

10/21

10/23

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10/27

10/29

10/31

10/13

Gills Creek A (September 27, 2018 -- October 31, 2018)

Explanation of Statistics:

MINIMUM OBSERVED	The minimum of the values recorded by the datasonde in 15 minute intervals.
MAXIMUM OBSERVED	The maximum of the values recorded by the datasonde in 15 minute intervals.
MEDIAN OBSERVED	The median of all the values recorded by the datasonde in 15 minute intervals.
MEAN OBSERVED	The average of all the values recorded by the datasonde in 15 minute intervals.
STANDARD DEVIATION	The standard deviation of all the values recorded by the datasonde in 15 minute intervals.

Sampled Data:

	Sample 1		Sample 2		Sample 3		Sample 4	
Analyte (units)	10/3/2018		10/11/2018		10/11/2018		10/11/2018	
	Time	Results	Time	Results	Time	Results	Time	Results
Escherichia coli (MPN/100mL)	9:58	104	8:02	19,610	11:10	4,210	12:15	4,196
Total Suspended Solids (mg/L)					11:10	115	12:15	62
Total Phosphorus (mg/L)			8:02	0.24	11:10	0.11	12:15	0.06
Total Nitrogen (mg/L)			8:02	1.58	11:10	1.2	12:15	0.99

Notes: The sample collected on 10/3/2018 was collected during dry weather conditions. The samples collected on 10/11/2018 were collected during a wet weather event.





Gills Creek B (September 27, 2018 -- October 31, 2018)

DADAMETED	DESCRIPTION		SUMMARY STATISTICS				
	DESCRIPTION	PARAMETERS:	MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STREAM NAME:	Gills Creek	STAGE (FT):	2.9	7.2	3.2	3.5	0.7
LOCATION:	Devine Street bridge		50		70		-
ADDRESS:	4716 Devine Street Columbia, SC 29209	TEMPERATURE (*F):	58	83	76	74	/
COORDINATES:	33.989656, -80.97433		F	170	11	16	15
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	TORBIDITT (NTO).	5	172			
NEIGHBORING LANDUSE:	Residential and commercial	nHi	6.0	6.7	6.2	6.4	0.1
APPROX. DRAINAGE AREA:	59 square miles	рн:	0.0	0.7	0.5	0.4	0.1
SPATIAL LOCATION:	Middle site	SPECIFIC					
TOTAL NO. STORMS OVER 0.1 INCH:	8	CONDUCTIVITY (mS/cm):	0.038	0.066	0.053	0.054	0.004
MAX. DAILY RAINFALL:	3.2 inches	DISSOLVED					
TOTAL RAINFALL (FOR PERIOD):	6.3 inches	OXYGEN (mg/L):	3.5	9.6	7.0	7.0	1.2













Note: Data gaps appear when the sonde is removed for calibration or when the flow depth is below the sensors

Gills Creek B (September 27, 2018 -- October 31, 2018)

Explanation of Statistics:

MINIMUM OBSERVED	The minimum of the values recorded by the datasonde in 15 minute intervals.
MAXIMUM OBSERVED	The maximum of the values recorded by the datasonde in 15 minute intervals.
MEDIAN OBSERVED	The median of all the values recorded by the datasonde in 15 minute intervals.
MEAN OBSERVED	The average of all the values recorded by the datasonde in 15 minute intervals.
STANDARD DEVIATION	The standard deviation of all the values recorded by the datasonde in 15 minute intervals.

Sampled Data:

Analyte (units)	Sample 1		Sample 2		Sample 3		Sample 4	
	10/3/2018		10/11/2018		10/11/2018		10/11/2018	
	Time	Results	Time	Results	Time	Results	Time	Results
Escherichia coli (MPN/100mL)	10:14	82	7:45	12,260	11:35	7,308	12:45	7,646
Total Suspended Solids (mg/L)			7:45	90	11:35	94	12:45	70.7
Total Phosphorus (mg/L)			7:45	0.096	11:35	0.1	12:45	0.087
Total Nitrogen (mg/L)			7:45	0.89	11:35	1.06	12:45	1.09

Notes: The sample collected on 10/3/2018 was collected during dry weather conditions. The samples collected on 10/11/2018 were collected during a wet weather event.





Gills Creek C (September 27, 2018 -- October 31, 2018)

		CONTINUOUS SUMMARY STATISTICS				rics	
PARAMETER	DESCRIPTION	WATER QUALITY PARAMETERS:	MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STREAM NAME:	Gills Creek	STAGE (FT):	3.0	8.2	3.7	4.1	1.2
LOCATION:	Bluff Road bridge		67	57 81	75	72	0
ADDRESS:	3009 Bluff Rd. Columbia, SC 29209	TEMPERATURE ("F):	57				ŏ
COORDINATES:	33.948043, -80.9889		F	77	13	16	10
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen		5				
NEIGHBORING LANDUSE:	Residential and commercial	nH:	6.0	6.4	63	63	0.1
APPROX. DRAINAGE AREA:	64 square miles	pn.	0.0	0.4	0.0	0.0	0.1
SPATIAL LOCATION:	Most downstream site	SPECIFIC					
TOTAL NO. STORMS OVER 0.1 INCH:	6	CONDUCTIVITY (mS/cm):	0.043	0.076	0.061	0.062	0.007
MAX. DAILY RAINFALL:	3.11 inches	DISSOLVED					
TOTAL RAINFALL (FOR PERIOD):	6.0 inches	OXYGEN (mg/L):	3.9	8.3	5.3	5.6	1.0
		Stage & Rain	fall				
# 12 # 10 8							0.00 0.25 .= 0.50 =













Note: Data gaps appear when the sonde is removed for calibration or when the flow depth is below the sensors

REPORT GENERATED ON 11/27/2018

Gills Creek C (September 27, 2018 -- October 31, 2018)

Explanation of Statistics:

MINIMUM OBSERVED	The minimum of the values recorded by the datasonde in 15 minute intervals.
MAXIMUM OBSERVED	The maximum of the values recorded by the datasonde in 15 minute intervals.
MEDIAN OBSERVED	The median of all the values recorded by the datasonde in 15 minute intervals.
MEAN OBSERVED	The average of all the values recorded by the datasonde in 15 minute intervals.
STANDARD DEVIATION	The standard deviation of all the values recorded by the datasonde in 15 minute intervals.

Sampled Data:

	Sample 1		Sample 2		Sample 3		Sample 4		
Analyte (units)	10/3,	10/3/2018		10/11/2018		10/11/2018		10/11/2018	
	Time	Results	Time	Results	Time	Results	Time	Results	
Escherichia coli (MPN/100mL)	10:33	104	8:25	3,450	11:55	6,510	13:00	5,226	
Total Suspended Solids (mg/L)			8:25	28	11:55	39	13:00	31.3	
Total Phosphorus (mg/L)					11:55	0.093	13:00	0.09	
Total Nitrogen (mg/L)			8:25	0.86	11:55	0.78	13:00	0.75	

Notes: The sample collected on 10/3/2018 was collected during dry weather conditions. The samples collected on 10/11/2018 were collected during a wet weather event.