Gills Creek Monitoring Sites Monitoring Data Summary for April 25th, 2019 – June 18th, 2019

Data Gaps

- The GILA and GILB station experienced some brief periods of sensor fouling during tis monitoring period. These periods were deleted from the datasets.
- The GILB CS451 pressure transducer did not record to the website for several brief periods throughout this entire monitoring period. Therefore, there is several data gaps in the GILB CS451 stage data.
- The GILC datasonde became buried from June 10th-14th. The turbidity, DO, and pH sensors were buried in sediment at this time, so these parameters were deleted during this period.

SCDHEC Standards

- The GILA station did not record a pH reading outside of the acceptable SCDHEC range of 6 to 8.5.
- The GILB station recorded a minimum pH value of 5.8 and a maximum pH value of 9.0. These values are outside of the acceptable SCDHEC range of 6 to 8.5. The low pH values occurred during extended dry weather conditions, likely a result of low flow. The high pH values occurred on May 3rd during a potential illicit discharge activity where pH and specific conductivity significantly increased simultaneously.
- The GILC station recorded a minimum pH value of 5.9 which is slightly below the acceptable range. The low pH values were recorded during a storm event.
- The GILA station recorded an average DO value of 6.9 mg/L, the GILB station recorded an average DO value of 5.9 mg/L, and the GILC station recorded an average DO value of 6.0 mg/L, all of which are above the SCDHEC daily average DO standard of 5 mg/L.
- During this deployment period, the GILA and GILB stations recorded minimum DO levels of 2.2 mg/L and 0.8 mg/L, respectively, which are below the SCDHEC instantaneous minimum standard of 4 mg/L.
 - The low DO values at the GILA station were recorded from June 6th-8th during a large storm event.
 - The low DO values at the GILB station were recorded during an extended period of dry weather, likely due to low/stagnant flow conditions.
- The minimum DO value recorded at the GILC station was 4.0 mg/L which is equivalent to the SCDHEC instantaneous minimum standard of 4 mg/L.

Storm Events

- The GILA station recorded 11 storm events resulting in approximately 8.8 inches of rainfall. The GILB station recorded 12 storms that resulted in approximately 6.7 inches of rainfall. The GILC station recorded 13 storms that resulted in approximately 9.0 inches of rainfall.
- The monitored water quality parameters in the Gills Creek watershed all 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 24.6 days at the GILA and GILB stations and approximately 24.0 days at the GILC station, all occurring prior to the June 5th storm event.

Potential Illicit Discharges and Abnormal Events

- A potential illicit discharge activity was observed at the GILB station on May 3rd causing a significant increase in pH and specific conductivity.
- The turbidity at GILB became elevated and noisy for a brief period between May 19th-24th. The elevated turbidity during this period may have been caused by construction activities occurring upstream of the GILB monitoring station, or high-sediment runoff from nearby excavation activity.
- The pH and specific conductivity levels significantly increased on April 16th-17th at both the GILB and GILC stations. This was likely a result of an illicit discharge activity.

Flow Measurements

• No flow measurements were taken in Gills Creek during this monitoring period.





Gills Creek A (April 25, 2019 -- June 18, 2019)

		CONTINUOUS	SUMMARY STATISTICS		ncs			
PARAMETER	DESCRIPTION	WATER QUALITY PARAMETERS:	MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION	
STREAM NAME:	Gills Creek	STAGE (FT):	1.9	6.4	2.3	2.5	0.7	
LOCATION:	Forest Drive Bridge	TEMPERATURE			70	70		
ADDRESS:	4840 Forest Drive, Columbia, SC 29206	(°F):	69	88	78	79	4	
COORDINATES:	34.019826, -80.963566	TURBIDITY (NTU):	2	432	7	16	28	
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen							
LANDUSE:	Residential and commercial	pH:	6.0	7.0	6.4	6.4	0.2	
AREA:	48 square miles							
SPATIAL LOCATION:	Most upstream site	SPECIFIC CONDUCTIVITY	0.030	0.077	0.047	0.048	0.006	
OVER 0.1 INCH:	11	(mS/cm):						
MAX. DAILY RAINFALL:	2.1 inches		2.2	8.4	7.5	6.9	1.2	
(FOR PERIOD):	8.8 inches							
Stage & Rainfall								
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2 age							1.0 E	
					.,	,,		
05		Water Te	mp					
85			h					
⁶ 75								
65 4/27 4/29 5/1	5/3 5/5 5/7 5/9 5/11 5/13	5/15 5/17 5/19 5/21 5	/23 5/25 5/27 5		6/4 6/6 6/8	6/10 6/12 6/14	6/16 6/18	
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4/25 4/27 4/29 5/1	5/3 5/5 5/7 5/9 5/11 5/1	3 5/15 5/17 5/19 5/21	5/23 5/25 5/27	5/29 5/31 6/2	6/4 6/6 6/8	6/10 6/12 6/14	6/16 6/18	
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7.4		pH)	
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E 0.04					- M	A second		
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10 SCDHEC in-stream stan	dard: Daily average not less than 5 mg/L wi	th a low of 4 mg/L Dissolv	ed Oxygen			- 4 mg/L (SCDHEC Lo	w Standard)	
				~~~~	AAA			
							+	
4/25 4/27 4/29 5/1	5/3 5/5 5/7 5/9 5/11 5/13	3 5/15 5/17 5/19 5/21	5/23 5/25 5/27	5/29 5/31 6/2	6/4 6/6 6/8	6/10 6/12 6/1	4 6/16 6/18	

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

## Gills Creek A (April 25, 2019 -- June 18, 2019)

## **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:

	Sam	ple 1	Sam	ple 2	Sample 3		Sample 4	
Analyte (units)								
	Time	Results	Time	Results	Time	Results	Time	Results
Escherichia coli								
(MPN/100mL)								
Total Suspended								
Solids (mg/L)								
Total Phosphorus (mg/L)								
Total Nitrogen (mg/L)								

Notes:





#### Gills Creek B (April 25, 2019 -- June 18, 2019)

DADAMETER	DECODIDITION		SUMMARY STATISTICS				
PARAMETER	DESCRIPTION	PARAMETERS:	MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STREAM NAME:	Gills Creek	STAGE (FT):	2.8	7.7	3.0	3.4	1.0
LOCATION:	Devine Street bridge	TEMPERATURE	70	00	70	70	4
ADDRESS:	4716 Devine Street Columbia, SC 29209	(°F):	70	00	79	79	4
COORDINATES:	33.989656, -80.97433						
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	TURBIDITY (NTU):	6	392	23	32	36
NEIGHBORING LANDUSE:	Residential and commercial	nH:	5.8	9.0	6.2	63	0.2
APPROX. DRAINAGE AREA:	59 square miles	pn.	5.0	3.0	0.2	0.0	0.2
SPATIAL LOCATION:	Middle site	SPECIFIC					
TOTAL NO. STORMS OVER 0.1 INCH:	12	CONDUCTIVITY (mS/cm):	0.035	0.096	0.054	0.055	0.007
MAX. DAILY RAINFALL:	2.2 inches	DISSOLVED		7.0	0.7	5.0	1.0
TOTAL RAINFALL (FOR PERIOD):	6.7 inches	OXYGEN (mg/L):	0.8	7.9	6.7	5.9	1.6
		Stage & Rain	fall				
12 12 13 13 14 15 15 15 15 15 15 15 15 15 15							
Water Temp							











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

## Gills Creek B (April 25, 2019 -- June 18, 2019)

## **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:

	Sam	ple 1	Sam	Sample 2 Sample 3		ple 3	Sample 4	
Analyte (units)	4/22/2019		5/20/2019					
	Time	Results	Time	Results	Time	Results	Time	Results
Escherichia coli (MPN/100mL)	15:06	20	15:07	124				
Total Suspended Solids (mg/L)	15:06	8.4	15:07	44.5				
Total Phosphorus (mg/L)								
Total Nitrogen (mg/L)								

Notes: These samples were collected during dry weather conditions.





#### Gills Creek C (April 25, 2019 -- June 18, 2019)

		CONTINUOUS		SUN	IMARY STATIS	rics	
PARAMETER	DESCRIPTION	WATER QUALITY PARAMETERS:	MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STREAM NAME:	Gills Creek	STAGE (FT):	2.7	9.2	3.3	3.9	1.4
LOCATION:	Bluff Road bridge	TEMPERATURE	67	0.4	77	77	2
ADDRESS:	3009 Bluff Rd. Columbia, SC 29209	(°F):	67	84	11	17	3
COORDINATES:	33.948043, -80.9889			79	5	6	5
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	TURBIDITY (NTU):	2				
NEIGHBORING LANDUSE:	Residential and commercial		5.0	6.5	6.2	6.2	0.1
APPROX. DRAINAGE AREA:	64 square miles	pn.	5.9	0.5	0.5	0.3	0.1
SPATIAL LOCATION:	Most downstream site	SPECIFIC					
TOTAL NO. STORMS OVER 0.1 INCH:	13	CONDUCTIVITY (mS/cm):	0.043	0.08	0.065	0.064	0.008
MAX. DAILY RAINFALL:	2.68 inches	DISSOLVED	4.0	7.0	F 0	<b>C</b> O	0.6
TOTAL RAINFALL (FOR PERIOD):	9.0 inches	OXYGEN (mg/L):	4.0	7.0	5.9	0.0	0.6
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Note: Data gaps appear when the sonde is removed for calibration or when the flow depth is below the sensors

## Gills Creek C (April 25, 2019 -- June 18, 2019)

## **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 Sar		Sam	ple 4
Analyte (units)	4/22/2019		5/20/2019					
	Time	Results	Time	Results	Time	Results	Time	Results
<i>Escherichia coli</i> (MPN/100mL)	15:26	1024	15:29	60				
Total Suspended Solids (mg/L)	15:26	4.1	15:29	3.7				
Total Phosphorus (mg/L)								
Total Nitrogen (mg/L)								

Notes: These samples were collected during dry weather conditions.