# Gills Creek Monitoring Sites Monitoring Data Summary for June 19<sup>th</sup>, 2019 – July 25<sup>th</sup>, 2019

#### Data Gaps

- The GILA station did not have any interruptions in the data during this monitoring period.
- The GILB station experienced turbidity sensor fouling for a brief period on July 20<sup>th</sup> that was deleted from the dataset.
- The GILC station experienced two brief periods of turbidity sensor fouling occurring from June 30<sup>th</sup>-July 2<sup>nd</sup> and from July 6<sup>th</sup>-8<sup>th</sup>. These periods of turbidity data were deleted from the dataset.

#### **SCDHEC Standards**

- The GILA station did not record any pH readings outside of the acceptable SCDHEC range of 6 to 8.5.
- The GILB and GILC stations both recorded a minimum pH reading of 5.9, which is slightly below the acceptable SCDHEC range.
- The GILA station recorded an average DO value of 6.7 mg/L, the GILB station recorded an average DO value of 5.5 mg/L, and the GILC station recorded an average DO value of 5.0 mg/L, all of which are above or equivalent to 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 4.6 mg/L, 1.4 mg/L, and 3.8 mg/L, respectively. The GILA station did not record any DO values below the SCDHEC instantaneous minimum standard of 4 mg/L. The GILB and GILC stations recorded minimum DO values below the SCDHEC standard, which were recorded during storm events.

#### Storm Events

- The GILA station recorded 9 storm events resulting in approximately 6.0 inches of rainfall. The GILB station recorded 8 storms that resulted in approximately 4.7 inches of rainfall. The GILC station recorded 7 storms that resulted in approximately 5.0 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 9.6 days at the GILA and GILB station and approximately 12.4 days at the GILC station, all occurring prior to the July 4<sup>th</sup> storm event.

#### Potential Illicit Discharges and Abnormal Events

• It appears that water was released from Lake Katherine, observed at the GILB station, after the storm event on June 23<sup>rd</sup> and remained open until July 3<sup>rd</sup> when a sudden drop in stage occurred. The DO was impacted during this time, causing the DO to read values below the SCDHEC instantaneous minimum standard of 4 mg/L.

#### Flow Measurements

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

#### Notes

The GILB CS451 pressure transducer was not recording continuous readings during this deployment period, so
the CS451 stage data for this deployment period was deleted. For the periodic report, the discharge data from
the USGS 02169570 Gills Creek station was used instead of the CS451 stage data. This USGS station is located
directly downstream of the GILB monitoring station.





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## Gills Creek A (June 19, 2019 -- July 25, 2019)

	ARAMETER DESCRIPTION		CONTINUOUS WATER QUALITY		SUMMARY STATISTICS									
PARAMETER				PARAMETERS:		M ED	MAXIMUN OBSERVE		MEDIAN OBSERVE		MEAN BSERVED		ANDAR VIATIO	
STREAM NAME:	Gills Creek		STAGE	(FT):	2.0		4.9		2.2		2.3		0.3	
LOCATION:	Forest Drive Bridge		TEMPE	RATURE									_	
ADDRESS:	4840 Forest Drive, Columbia, SC 29206		(°F):		76		93		86		86		2	
COORDINATES:	34.019826, -80.963566		TUBBIC	NTV (NTU).	2		287		4		8		22	
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen		TORBIL	TURBIDITY (NTU):			201		4		0		22	
NEIGHBORING LANDUSE:	Residential and commercia	ıl	pH:		6.1		7.6		6.5		6.4		0.1	
APPROX. DRAINAGE AREA:	48 square miles													
SPATIAL LOCATION:	Most upstream site		SPECIF	ic										
TOTAL NO. STORMS OVER 0.1 INCH:	9		CONDU (mS/cm	ICTIVITY ):	0.026		0.061		0.046		0.046		0.002	
MAX. DAILY RAINFALL:	1.5 inches		DISSOL		4.6		7.8		6.8		6.7		0.7	
TOTAL RAINFALL (FOR PERIOD):	6.0 inches		OXTGE	N (mg/L):										
				Stage & Ra	infall									
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Gills Creek A (June 19, 2019 -- July 25, 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		Sample 4	
Analyte (units)	6/20,	/2019	7/12/2019					
	Time	Results	Time	Results	Time	Results	Time	Results
Escherichia coli (MPN/100mL)	10:10	1366	10:22	296				
Total Suspended Solids (mg/L)								
Total Phosphorus (mg/L)								
Total Nitrogen (mg/L)								

Notes: This sample was collected during dry weather conditions.





## Gills Creek B (June 19, 2019 -- July 25, 2019)

		CONTINUOUS	SUMMARY STATISTICS						
PARAMETER	DESCRIPTION	WATER QUALITY PARAMETERS:	MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARI DEVIATION		
STREAM NAME:	Gills Creek	DISCHARGE (CFS):	21.2	403.0	37.6	51.4	42.7		
LOCATION:	Devine Street bridge	TEMPERATURE	70	01	96	96	2		
ADDRESS:	4716 Devine Street Columbia, SC 29209	(°F):	78	91	86	86	2		
COORDINATES:	33.989656, -80.97433		_						
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	TURBIDITY (NTU):	5	311	12	18	21		
NEIGHBORING LANDUSE:	Residential and commercial	pH:	5.9	6.6	6.1	6.2	0.2		
APPROX. DRAINAGE AREA:	59 square miles	<b>P</b>	0.0	0.0	0.1	0.2	0.2		
SPATIAL LOCATION:	Middle site	SPECIFIC							
TOTAL NO. STORMS OVER 0.1 INCH:	8	CONDUCTIVITY (mS/cm):	0.035	0.109	0.057	0.060	0.013		
MAX. DAILY RAINFALL:	1.6 inches	DISSOLVED							
TOTAL RAINFALL (FOR PERIOD):	4.7 inches	OXYGEN (mg/L):	1.4	7.8	5.7	5.5	1.3		
This discharge data is fro	om the USGS 02169570 Gills Creek station.	Discharge &	Rainfall						
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6.8	6/25 6/27 6/29 7/1		7/9 7/11	7/13 7/19	5 7/17 7/1	19 7/21 7/	23 7/25		
6.8 6.4 6.4 6.2	6/25 6/27 6/29 7/1		7/9 7/11	7/13 7/19	5 7/17 7/1	9 7/21 7/	23 7/25		
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6.8 6.6 6.6 6.6 6.4 6.2 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	6/25 6/27 6/29 7/1	pH 7/3 7/5 7/7  Specific Cor 7/3 7/5 7/7	7/9 7/11  rductivity  7/9 7/11	7/13 7/15	7/17 7/1	19 7/21 7/	23 7/25		
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Gills Creek B (June 19, 2019 -- July 25, 2019)

# **Explanation of Statistics:**

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## **Sampled Data:**

	Sample 1		Sample 2		Sample 3		Sam	ple 4
Analyte (units)	6/19,	/2019	6/21,	/2019	7/22,	/2019		
	Time	Results	Time	Results	Time	Results	Time	Results
Escherichia coli (MPN/100mL)	10:55	218	9:47	104	10:15	576		
Total Suspended Solids (mg/L)	10:55	9.1	9:47	8.6	10:15	8.2		
Total Phosphorus (mg/L)								
Total Nitrogen (mg/L)								

Notes: Sample 1 was collected during wet weather conditions. Sample 2 and Sample 3 were collected during dry conditions.





## Gills Creek C (June 19, 2019 -- July 25, 2019)

		CONTINUOUS	SUMMARY STATISTICS						
PARAMETER	DESCRIPTION	WATER QUALITY PARAMETERS:	MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARE DEVIATION		
STREAM NAME:	Gills Creek	STAGE (FT):	2.9	6.1	3.5	3.7	0.7		
OCATION:	Bluff Road bridge	TEMPERATURE	77	00	00	00	2		
ADDRESS:	3009 Bluff Rd. Columbia, SC 29209	(°F):	77	88	83	83	2		
COORDINATES:	33.948043, -80.9889	TURRIDITY (NTU)	_	404	0	40	44		
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	TURBIDITY (NTU):	5	131	8	12	11		
NEIGHBORING LANDUSE:	Residential and commercial	-11.	5.0	6.4	0.0	0.0	0.4		
APPROX. DRAINAGE AREA:	64 square miles	pH:	5.9	6.4	6.3	6.2	0.1		
SPATIAL LOCATION:	Most downstream site	SPECIFIC							
OTAL NO. STORMS OVER 0.1 INCH:	7	CONDUCTIVITY (mS/cm):	0.047	0.076	0.064	0.065	0.006		
MAX. DAILY RAINFALL:	1.97 inches	DISSOLVED OXYGEN (mg/L):	3.8	6.0	5.0	5.0	0.4		
PERIOD):	5.0 inches	, ,					<u> </u>		
12		Stage & Rair	ıfall				0.0		
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7 SCDHEC in-stream star	ndard: Daily average not less than 5 mg/L w	ith a low of 4 mg/L Dissolv	ved Oxygen			4 mg/L (SCDHEC Lov	v Standard)		

Gills Creek C (June 19, 2019 -- July 25, 2019)

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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)	6/19,	/2019	7/21,	/2019	7/22/2019			
	Time	Results	Time	Results	Time	Results	Time	Results
Escherichia coli (MPN/100mL)	12:15	1412	9:20	242	10:45	104		
Total Suspended Solids (mg/L)	12:15	6.8	9:20	6.2	10:45	6.6		
Total Phosphorus (mg/L)								
Total Nitrogen (mg/L)								

Notes: Sample 1 was collected during wet weather conditions. Sample 2 and Sample 3 were collected during dry condtions.