

Gills Creek Monitoring Sites

Monitoring Data Summary for April 30th, 2020 – June 3rd, 2020

Data Gaps

- The GILA station experienced turbidity sensor fouling from May 19th-20th, May 25th-May 26th, and May 29th-June 3rd. These periods of turbidity data were removed from the dataset. The GILA station experienced DO sensor fouling from May 29th-June 3rd, so the data was removed from the dataset.
- The GILB station experienced turbidity, DO, and pH sensor fouling from May 25th-May 26th and May 31st-June 3rd. These periods of turbidity, DO, and pH data were removed from the dataset, likely due to the sonde becoming buried in sediment.
- The GILC station did not have any gaps in the data during this monitoring period.

SCDHEC Standards

- None of the Gills Creek monitoring stations recorded any pH readings outside of the acceptable SCDHEC range of 6 to 8.5.
- The GILA station recorded an average DO value of 8.3 mg/L, the GILB station recorded an average DO value of 7.6 mg/L, and the GILC station recorded an average DO value of 6.3 mg/L, all of which are 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 7.4 mg/L, 6.2 mg/L, and 2.2 mg/L, respectively. GILA and GILB did not record any DO values below the SCDHEC instantaneous minimum standard of 4 mg/L. GILC recorded DO values below this standard. These low values at GILC were recorded during a storm event and during a potential illicit discharge activity.

Storm Events

- The GILA station recorded 13 storm events resulting in approximately 10.5 inches of rainfall. The GILB station recorded 9 storms that resulted in approximately 9.0 inches of rainfall. The GILC station recorded 11 storms that resulted in approximately 8.5 inches of rainfall.
- The monitored water quality parameters mostly displayed typical storm event response patterns during the recorded storm events in the Gills Creek watershed.
- At the GILC station, the stage was significantly increased from May 19th until the sonde was retrieved on June 2nd. The increased stage was likely due to backwater occurring from the Congaree River. During this time, some abnormal activity was observed with the water quality data. The specific conductivity levels were lower than usual. Also, on May 22nd-23rd, the DO, pH, and water temperature all decreased simultaneously.

Potential Illicit Discharges and Abnormal Events

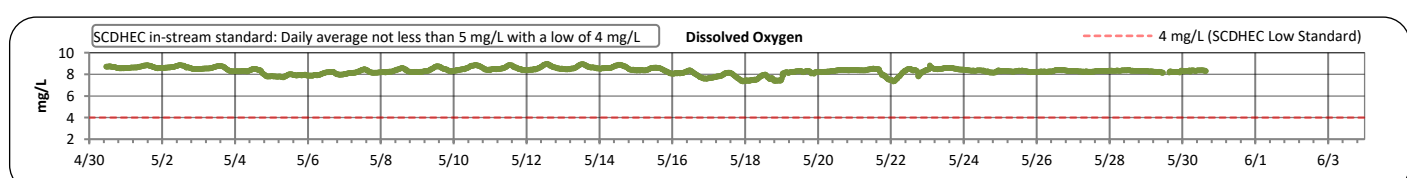
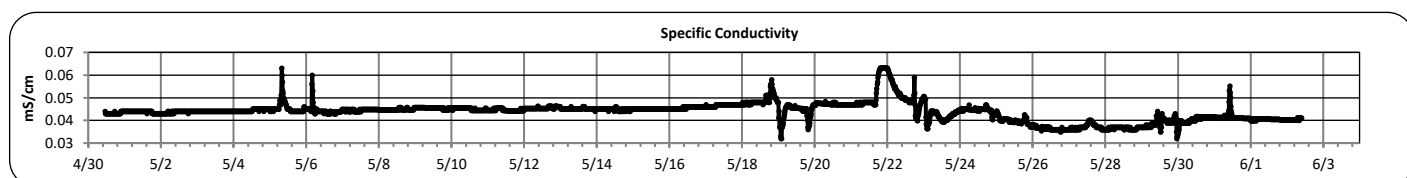
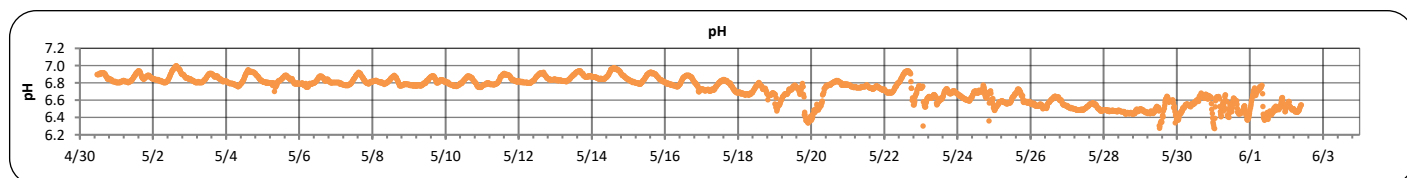
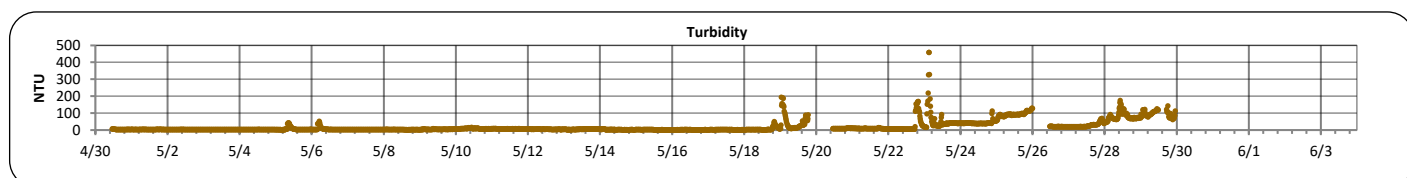
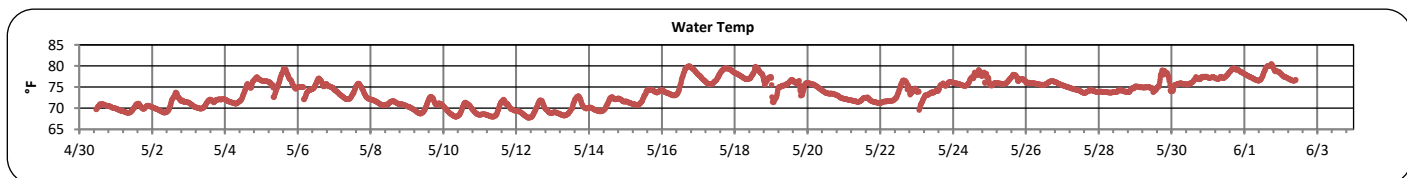
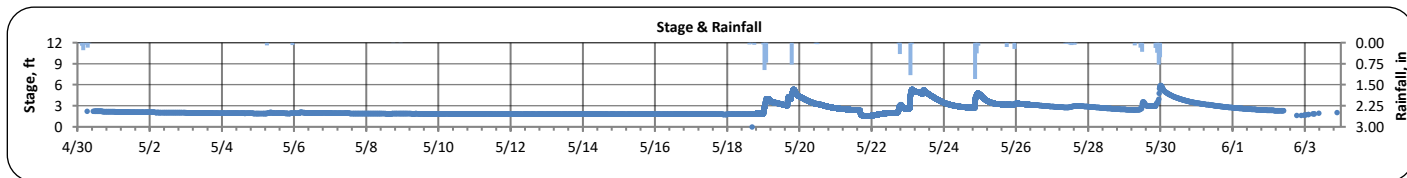
- At the GILA station, the specific conductivity increased several times during this deployment period. These specific conductivity spikes occurred on the following dates: May 5th, May 6th, May 21st, May 27th, and May 31st.
- At the GILB station, the specific conductivity increased several times during this deployment period. These specific conductivity spikes occurred on the following dates: May 5th, May 11th, and May 28th.
- On May 22nd-23rd, the DO, pH, and water temperature all decreased simultaneously at the GILC station. This activity occurred when stage was abnormally high due to backwater from the Congaree River and could potentially be the result of an illicit discharge.

Flow Measurements

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

Gills Creek A (April 30, 2020 - June 3, 2020)

PARAMETER	DESCRIPTION	CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
			MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STREAM NAME:	Gills Creek	STAGE (FT):	0.0	5.4	3.1	3.1	0.9
LOCATION:	Forest Drive Bridge	TEMPERATURE (°F):	68	81	74	74	3
ADDRESS:	4840 Forest Drive, Columbia, SC 29206	TURBIDITY (NTU):	2	459	5	20	34
COORDINATES:	34.019826, -80.963566	pH:	6.3	7.0	6.8	6.7	0.1
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	SPECIFIC CONDUCTIVITY (mS/cm):	0.032	0.063	0.044	0.044	0.004
NEIGHBORING LANDUSE:	Residential and commercial	DISSOLVED OXYGEN (mg/L):	7.4	9.0	8.4	8.3	0.3
APPROX. DRAINAGE AREA:	48 square miles						
SPATIAL LOCATION:	Most upstream site						
TOTAL NO. STORMS OVER 0.1 INCH:	13						
MAX. DAILY RAINFALL:	2.5 inches						
TOTAL RAINFALL (FOR PERIOD):	10.5 inches						



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

**Continuous Water Quality
Monitoring Periodic Report**

Gills Creek A (April 30, 2020 - June 3, 2020)

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.

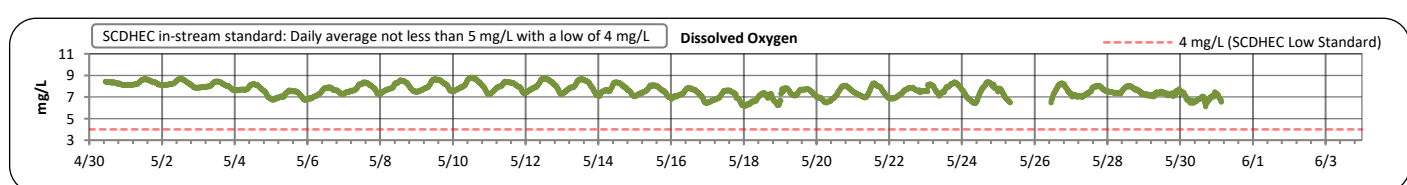
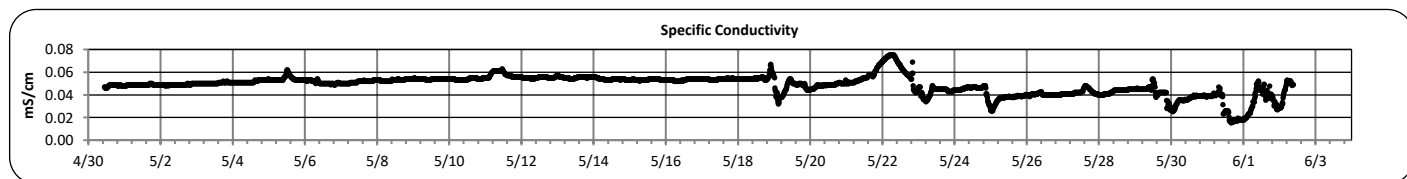
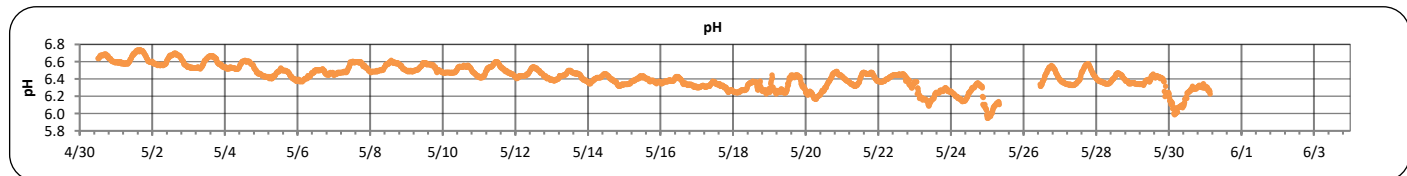
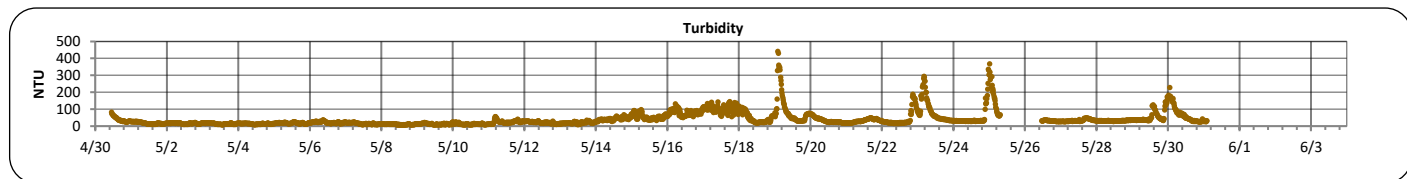
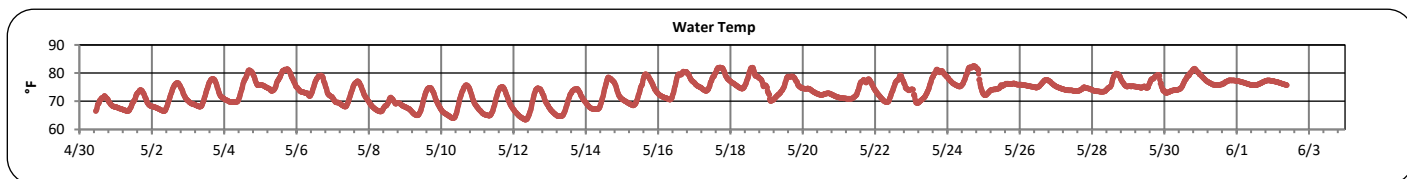
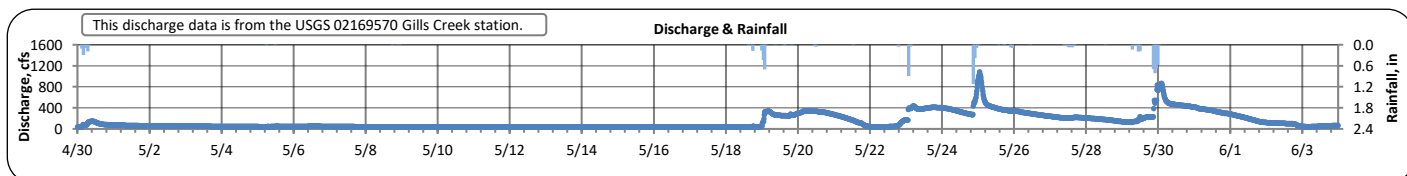
Sampled Data:

Analyte (units)	Sample 1		Sample 2		Sample 3		Sample 4	
	5/20/2020		5/20/2020					
	Time	Results	Time	Results	Time	Results	Time	Results
<i>Escherichia coli</i> (MPN/100mL)	10:35	626	12:25	974				
Total Suspended Solids (mg/L)	10:35	7.7	12:25	7.7				
Total Phosphorus (mg/L)	10:35	0.033	12:25	0.034				
Total Nitrogen (mg/L)	10:35	0.67	12:25	0.42				

Notes: All samples were taken during wet weather conditions.

Gills Creek B (April 30, 2020 - June 3, 2020)

PARAMETER	DESCRIPTION	CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
			MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STREAM NAME:	Gills Creek	DISCHARGE (CFS):	35.6	1090.0	55.0	146.0	152.7
LOCATION:	Devine Street bridge	TEMPERATURE (°F):	64	83	74	74	4
ADDRESS:	4716 Devine Street Columbia, SC 29209	TURBIDITY (NTU):	7	442	29	41	43
COORDINATES:	33.989656, -80.97433	pH:	6.0	6.7	6.4	6.4	0.1
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	SPECIFIC CONDUCTIVITY (mS/cm):	0.015	0.075	0.051	0.049	0.009
NEIGHBORING LANDUSE:	Residential and commercial	DISSOLVED OXYGEN (mg/L):	6.2	8.8	7.7	7.6	0.6
APPROX. DRAINAGE AREA:	59 square miles						
SPATIAL LOCATION:	Middle site						
TOTAL NO. STORMS OVER 0.1 INCH:	9						
MAX. DAILY RAINFALL:	3.3 inches						
TOTAL RAINFALL (FOR PERIOD):	9.0 inches						



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

**Continuous Water Quality
Monitoring Periodic Report**

Gills Creek B (April 30, 2020 - June 3, 2020)

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.

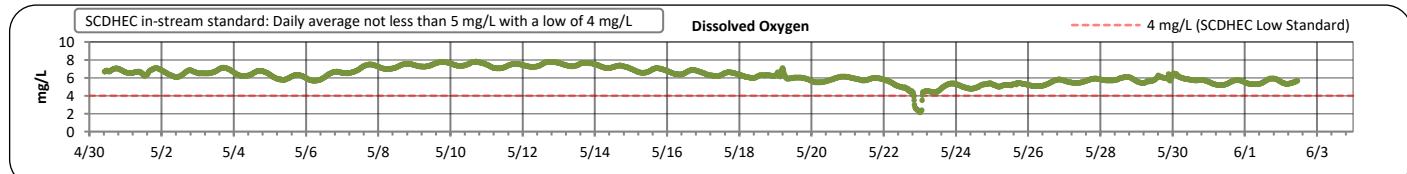
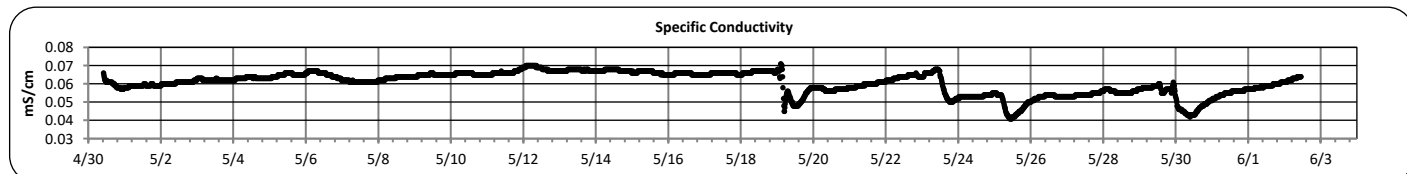
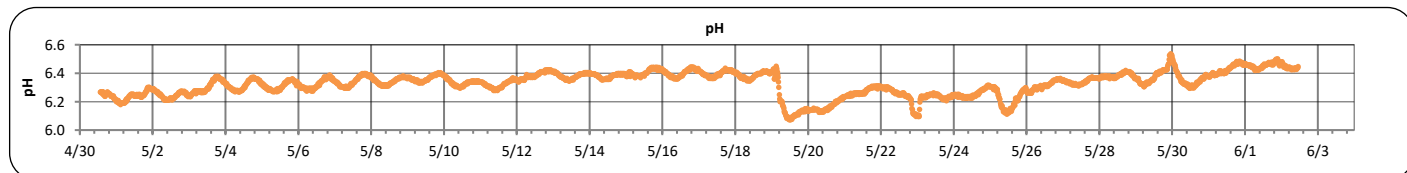
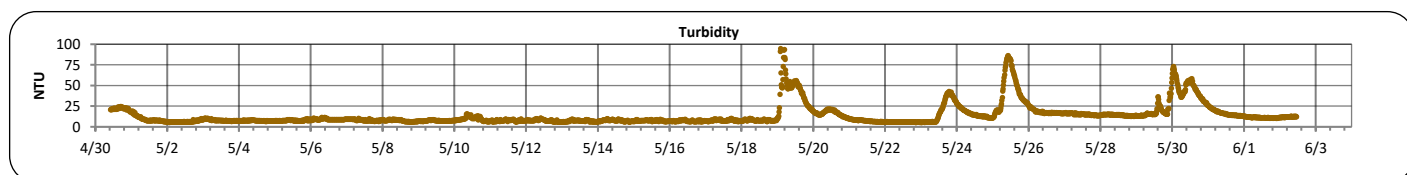
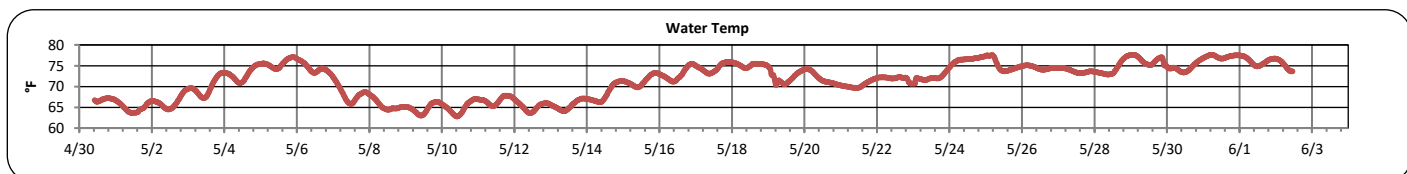
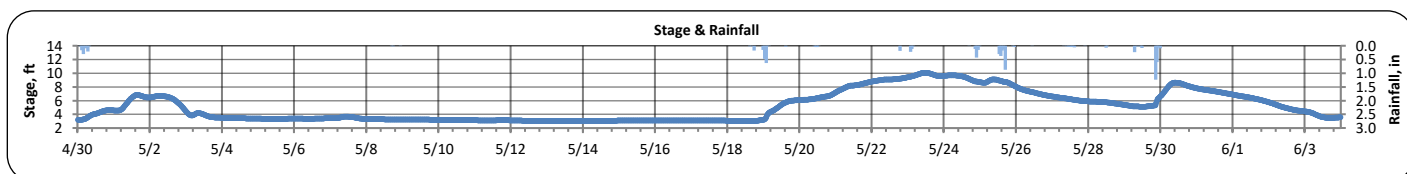
Sampled Data:

Analyte (units)	Sample 1		Sample 2		Sample 3		Sample 4	
	5/20/2020		5/20/2020		5/20/2020			
	Time	Results	Time	Results	Time	Results	Time	Results
<i>Escherichia coli</i> (MPN/100mL)	10:02	4,718	11:02	4,764	12:00	6,510		
Total Suspended Solids (mg/L)	10:02	22.8	11:02	24	12:00	20.2		
Total Phosphorus (mg/L)	10:02	0.044			12:00	0.052		
Total Nitrogen (mg/L)	10:02	0.88			12:00	0		

Notes: All samples were taken during wet weather conditions.

Gills Creek C (April 30, 2020 - June 3, 2020)

PARAMETER	DESCRIPTION	CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
			MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STREAM NAME:	Gills Creek	STAGE (FT):	3.0	10.1	3.5	4.9	2.3
LOCATION:	Bluff Road bridge	TEMPERATURE (°F):	63	78	72	71	4
ADDRESS:	3009 Bluff Rd. Columbia, SC 29209	TURBIDITY (NTU):	5	95	9	14	13
COORDINATES:	33.948043, -80.9889	pH:	6.1	6.5	6.3	6.3	0.1
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	SPECIFIC CONDUCTIVITY (mS/cm):	0.041	0.071	0.062	0.061	0.006
NEIGHBORING LANDUSE:	Residential and commercial	DISSOLVED OXYGEN (mg/L):	2.2	7.8	6.3	6.3	0.9
APPROX. DRAINAGE AREA:	64 square miles						
SPATIAL LOCATION:	Most downstream site						
TOTAL NO. STORMS OVER 0.1 INCH:	11						
MAX. DAILY RAINFALL:	2.34 inches						
TOTAL RAINFALL (FOR PERIOD):	8.5 inches						



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

**Continuous Water Quality
Monitoring Periodic Report**

Gills Creek C (April 30, 2020 - June 3, 2020)

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	
	5/20/2020		5/20/2020		5/20/2020			
	Time	Results	Time	Results	Time	Results	Time	Results
<i>Escherichia coli</i> (MPN/100mL)	9:45	3,444	11:25	3,214	11:35	2,792		
Total Suspended Solids (mg/L)	9:45	15.7	11:25	17.7	11:35	17.3		
Total Phosphorus (mg/L)	9:45	0.06			11:35	0.053		
Total Nitrogen (mg/L)	9:45	0.71			11:35	0.76		

Notes: All samples were taken during wet weather conditions.