Gills Creek Monitoring Sites
Monitoring Data Summary for
May 4th, 2017 – June 7th, 2017

Data Gaps

- The GILA and GILB sondes did not experience any interruptions in the data record during this monitoring period.
- The GILC sonde experienced turbidity fouling from May 11th – May 15th, and this data was removed from the dataset.

SCDHEC Standards

- The GILA and GILB stations did not record any pH readings outside of the acceptable SCDHEC range of 6 to 8.5.
- The GILC station recorded some pH values below the standard minimum of 6. These low values occurred during storm events. The lowest pH value recorded was 5.8.
- The GILA, GILB, and GILC stations recorded average DO concentrations of 7.7 mg/L, 7.2 mg/L, and 6.0 mg/L, respectively, during this monitoring period. All of these average values are well above the SCDHEC daily average standard of 5 mg/L.
- The GILA, GILB, and GILC stations recorded minimum DO levels of 5.4 mg/L, 4.8 mg/L, and 4.7 mg/L, respectively, during this deployment, above the SCDHEC instantaneous minimum standard of 4.0 mg/L.

Storm Events

- Ten storm events were recorded at the GILA station, nine storm events were recorded at GILB, and eight were recorded at GILC during this deployment period, resulting in 6.7 inches, 7.0 inches, and 4.3 inches of total precipitation at the GILA, GILB, and GILC stations, respectively. Several scattered thunderstorms impacted the GILA and GILB stations more severely than the GILC station, causing the lower rainfall total at the GILC location.
- The water quality parameters in the Gills Creek watershed displayed typical storm event response patterns in the turbidity dataset for the majority of recorded storm events.
- The maximum antecedent dry time since the last significant precipitation event (at least 0.1 inches) was approximately 7.4 days in the Gills Creek watershed, and occurred prior to the May 21st storm event.

Potential Illicit Discharges and Abnormal Events

- At the GILA station, the stage was observed to rapidly and significantly drop from May 15th – May 21st. These abrupt changes in stage were likely due to a sudden decrease in the discharge of Gills Creek from Forest Lake. As has been observed previously at this station, this decreased stage was associated with an increase in pH and specific conductivity and a decrease in DO, as the flow from Eightmile Branch contributed a larger portion of flow to Gills Creek at the GILA station. The impacts from this were also observed at the GILB and GILC stations.

Flow Measurements

- There were not any flow measurements taken at any of the Gills Creek stations during this deployment period.

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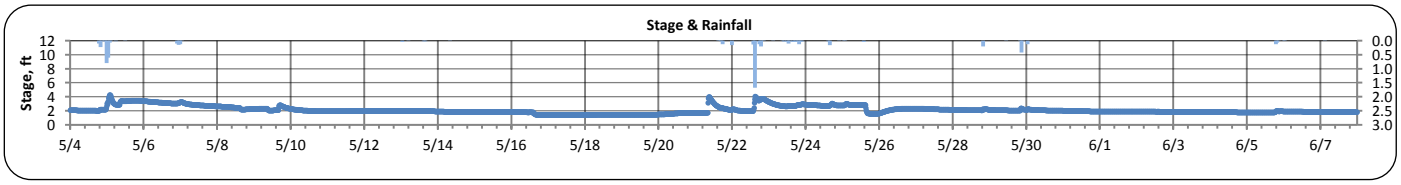
Continuous Water Quality Monitoring Periodic Report

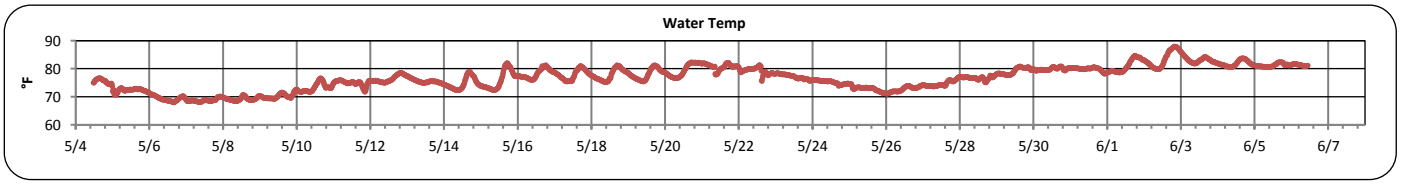
WOOLPERT

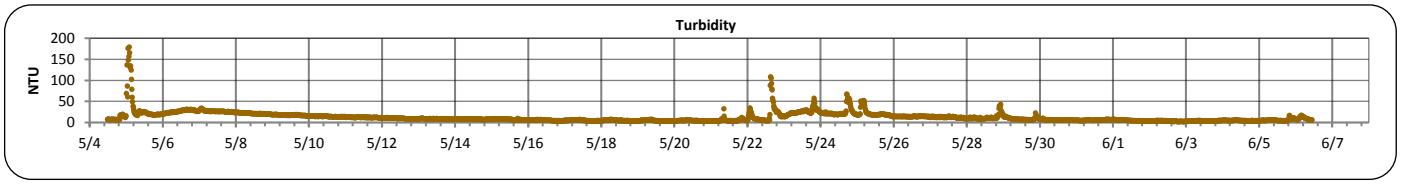
Gills Creek A (May 4, 2017 -- June 7, 2017)

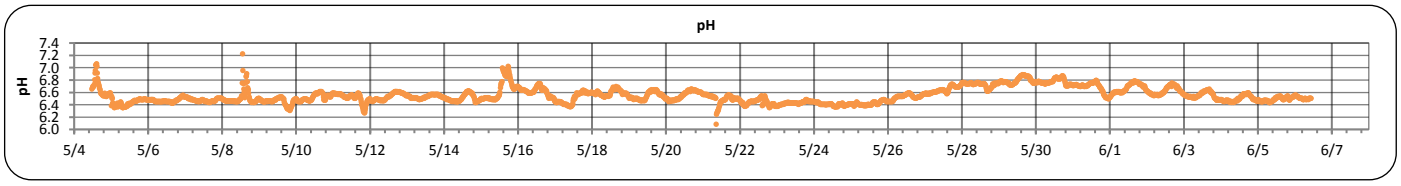
PARAMETER	DESCRIPTION
STREAM NAME:	Gills Creek
LOCATION:	Forest Drive Bridge
ADDRESS:	4840 Forest Drive, Columbia, SC 29206
COORDINATES:	34.019826, -80.963566
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen
NEIGHBORING LANDUSE:	Residential and commercial
APPROX. DRAINAGE AREA:	48 square miles
SPATIAL LOCATION:	Most upstream site
TOTAL NO. STORMS OVER 0.1 INCH:	10
MAX. DAILY RAINFALL:	2.2 inches
TOTAL RAINFALL (FOR PERIOD):	6.7 inches

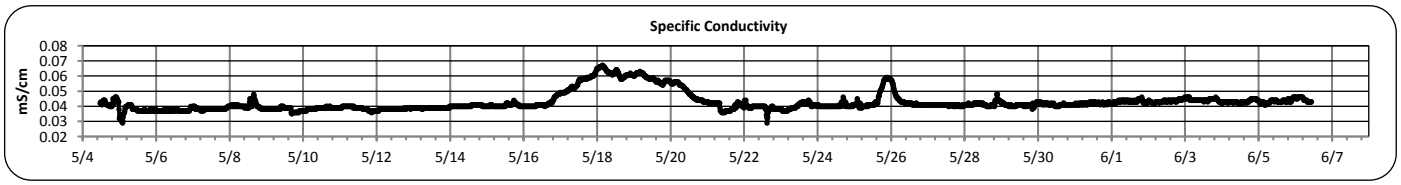
CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
	MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STAGE (FT):	1.4	4.3	2.0	2.1	0.5
TEMPERATURE (°F):	68	88	77	77	4
TURBIDITY (NTU):	2	179	9	13	12
pH:	6.1	7.2	6.5	6.6	0.1
SPECIFIC CONDUCTIVITY (mS/cm):	0.029	0.067	0.041	0.043	0.006
DISSOLVED OXYGEN (mg/L):	5.4	8.8	7.8	7.7	0.7

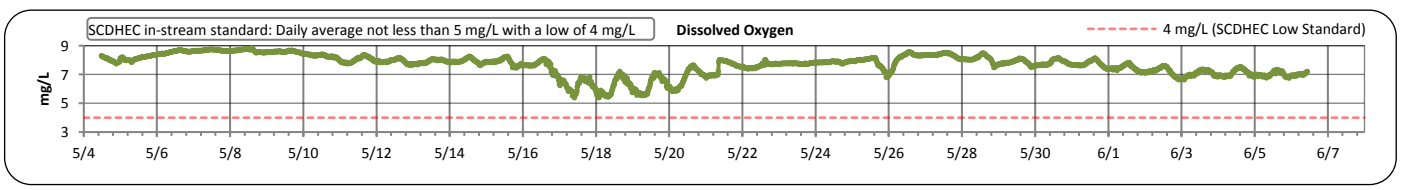












Note: Data gaps appear when the sonde is removed for calibration or when the flow depth is below the sensors

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Continuous Water Quality
Monitoring Periodic Report

Gills Creek A (May 4, 2017 -- June 7, 2017)

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	
	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:

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

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Continuous Water Quality Monitoring Periodic Report

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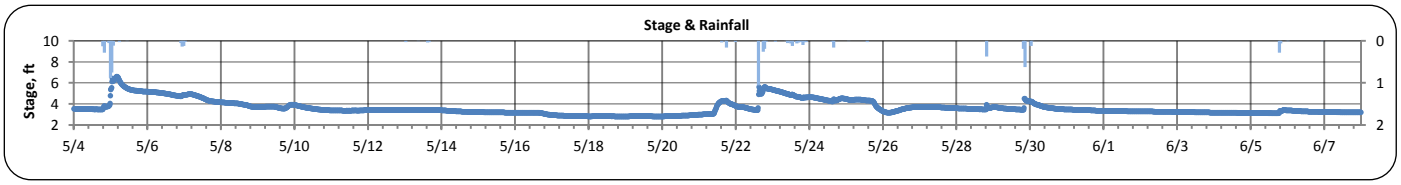
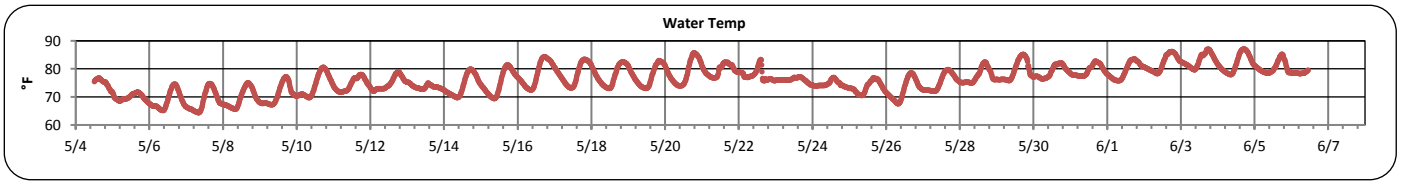
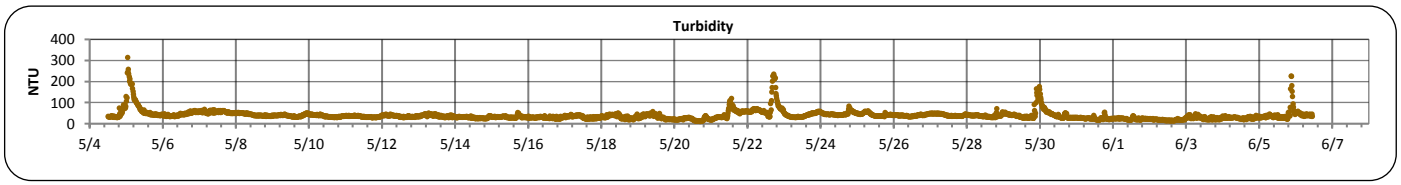
Gills Creek B (May 4, 2017 -- June 7, 2017)

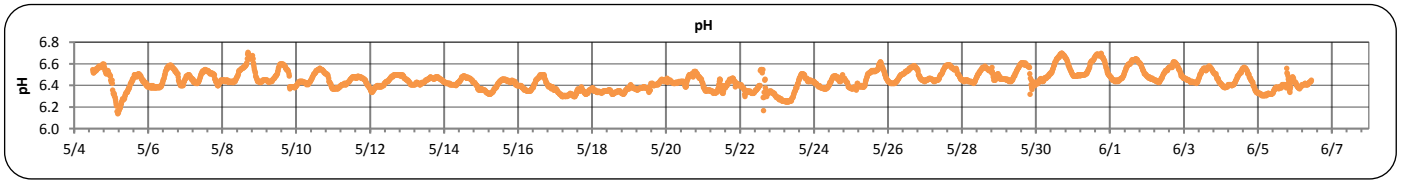
PARAMETER	DESCRIPTION
STREAM NAME:	Gills Creek
LOCATION:	Devine Street bridge
ADDRESS:	4716 Devine Street Columbia, SC 29209
COORDINATES:	33.989656, -80.97433
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen
NEIGHBORING LANDUSE:	Residential and commercial
APPROX. DRAINAGE AREA:	59 square miles
SPATIAL LOCATION:	Middle site
TOTAL NO. STORMS OVER 0.1 INCH:	9
MAX. DAILY RAINFALL:	1.5 inches
TOTAL RAINFALL (FOR PERIOD):	7.0 inches

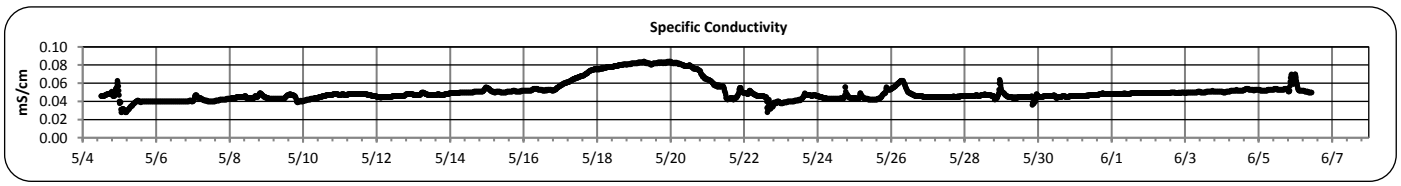
CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
	MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STAGE (FT):	2.8	6.6	3.4	3.6	0.7
TEMPERATURE (°F):	64	87	76	76	5
TURBIDITY (NTU):	12	314	37	40	23
pH:	6.1	6.7	6.4	6.4	0.1
SPECIFIC CONDUCTIVITY (mS/cm):	0.028	0.084	0.048	0.051	0.011
DISSOLVED OXYGEN (mg/L):	4.8	8.9	7.3	7.2	0.9

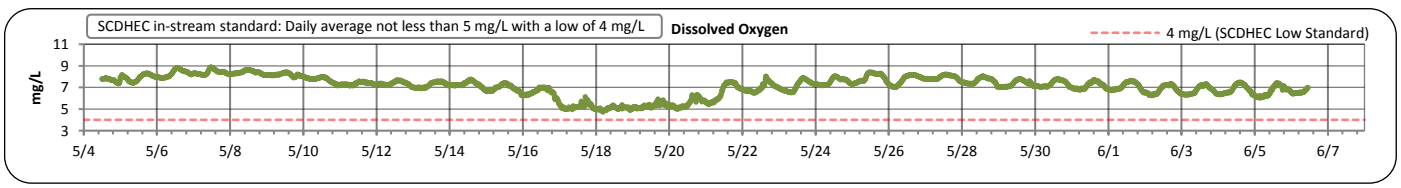












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Continuous Water Quality
Monitoring Periodic Report

Gills Creek B (May 4, 2017 -- June 7, 2017)

Explanation of Statistics:

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Sampled Data:

Analyte (units)	Sample 1		Sample 2		Sample 3		Sample 4	
	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:

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Continuous Water Quality Monitoring Periodic Report

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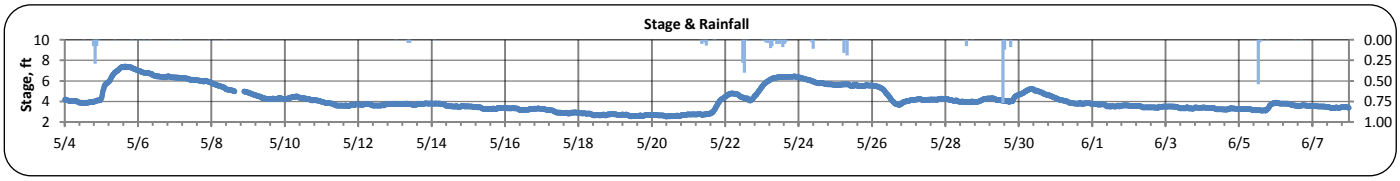
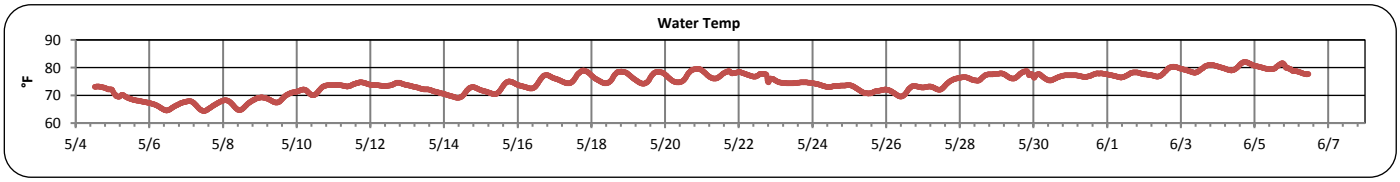
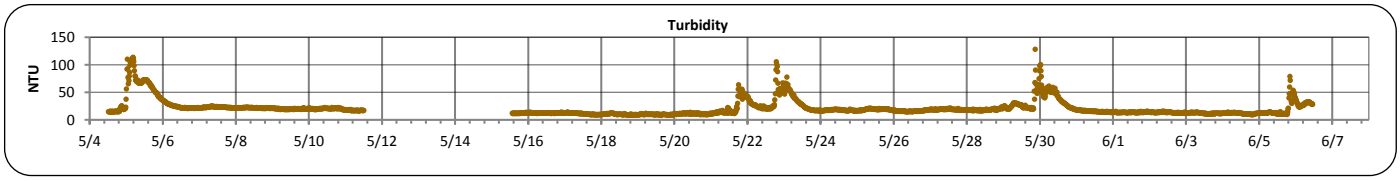
Gills Creek C (May 4, 2017 -- June 7, 2017)

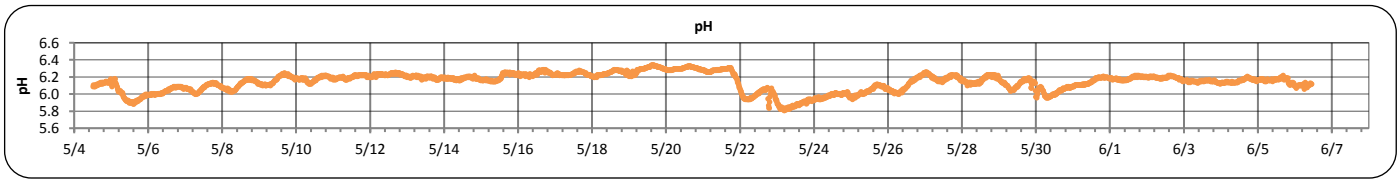
PARAMETER	DESCRIPTION
STREAM NAME:	Gills Creek
LOCATION:	Bluff Road bridge
ADDRESS:	3009 Bluff Rd. Columbia, SC 29209
COORDINATES:	33.948043, -80.9889
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen
NEIGHBORING LANDUSE:	Residential and commercial
APPROX. DRAINAGE AREA:	64 square miles
SPATIAL LOCATION:	Most downstream site
TOTAL NO. STORMS OVER 0.1 INCH:	8
MAX. DAILY RAINFALL:	0.9 inches
TOTAL RAINFALL (FOR PERIOD):	4.3 inches

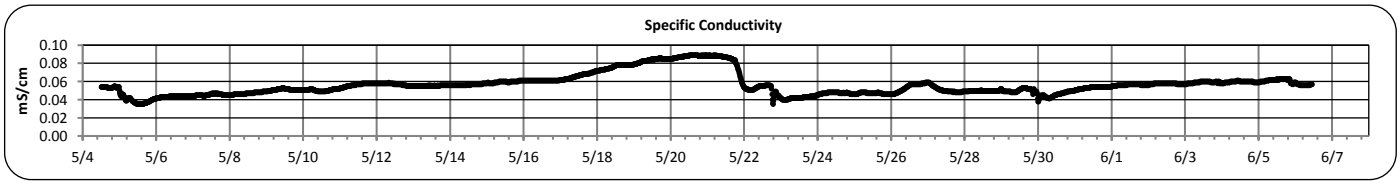
CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
	MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STAGE (FT):	2.5	7.4	3.8	4.2	1.1
TEMPERATURE (°F):	64	82	75	74	4
TURBIDITY (NTU):	8	128	18	21	15
pH:	5.8	6.3	6.2	6.1	0.1
SPECIFIC CONDUCTIVITY (mS/cm):	0.035	0.089	0.055	0.056	0.012
DISSOLVED OXYGEN (mg/L):	4.7	7.5	6.1	6.0	0.6

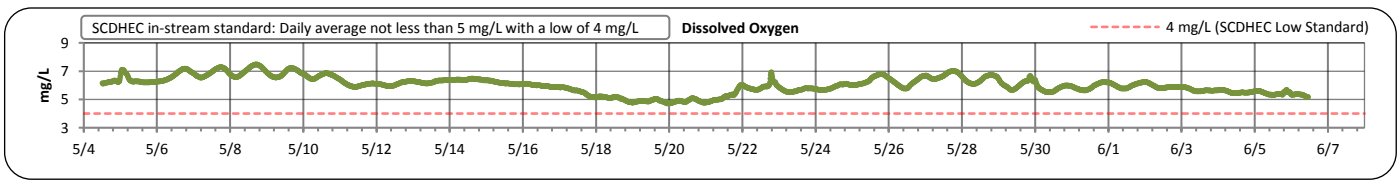












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Continuous Water Quality
Monitoring Periodic Report

Gills Creek C (May 4, 2017 -- June 7, 2017)

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Escherichia coli (MPN/100mL)								
Total Suspended Solids (mg/L)								
Total Phosphorus (mg/L)								
Total Nitrogen (mg/L)								

Notes:

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