

# Gills Creek Monitoring Sites

## Monitoring Data Summary for March 21<sup>st</sup>, 2019 – April 24<sup>th</sup>, 2019

### *Data Gaps*

- The GILA station experienced pH fouling, likely due to a buildup of pollen. Pollen accumulation during the spring months has significant impacts on sensor fouling. This pH data was removed from March 26<sup>th</sup>-28<sup>th</sup>.
- Neither the GILB or GILC station had any interruptions in the data during this monitoring period.

### *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 8.8 mg/L, the GILB station recorded an average DO value of 8.1 mg/L, and the GILC station recorded an average DO value of 7.7 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 7.2 mg/L, 6.9 mg/L, and 5.6 mg/L, respectively. None of the Gills Creek stations recorded any DO values below the SCDHEC instantaneous minimum standard of 4 mg/L.

### *Storm Events*

- The GILA and GILB stations both recorded 8 storm events, and both resulted in approximately 3.3 inches of rainfall. The GILC station recorded 8 storms that resulted in approximately 3.5 inches of rainfall.
- The monitored water quality parameters at GILB and GILC displayed typical storm event response patterns during the recorded storm events.
- At the GILA station, the specific conductivity increased during each storm event rather than decrease which is the typical specific conductivity response to storms.
- The maximum antecedent dry time since the last significant precipitation event (at least 0.1 inches) was approximately 16.6 days at each of the Gills Creek stations, occurring prior to the March 25<sup>th</sup> storm event.

### *Potential Illicit Discharges and Abnormal Events*

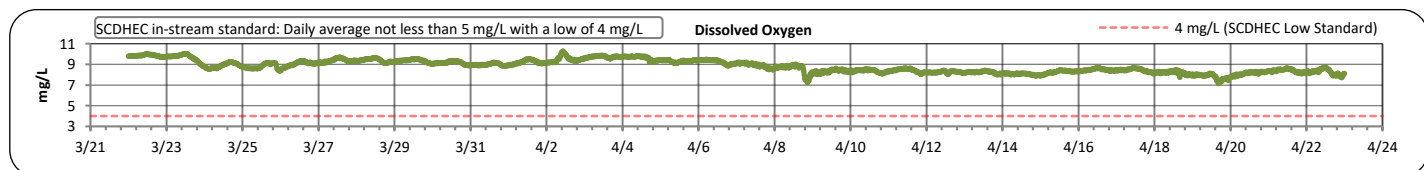
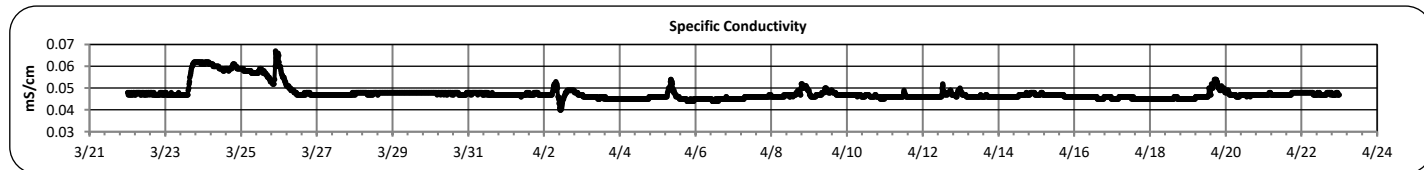
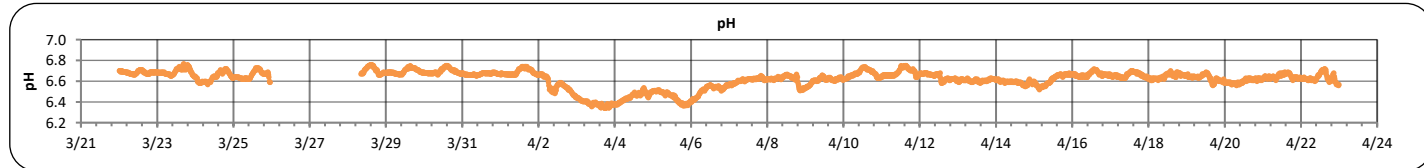
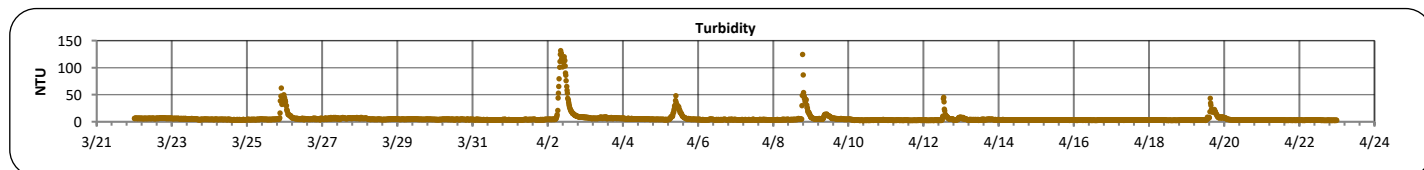
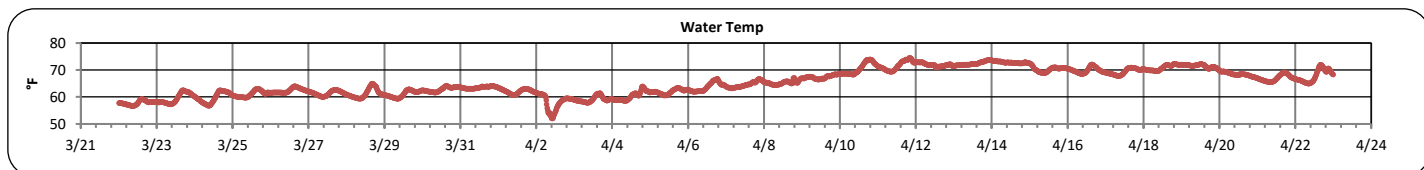
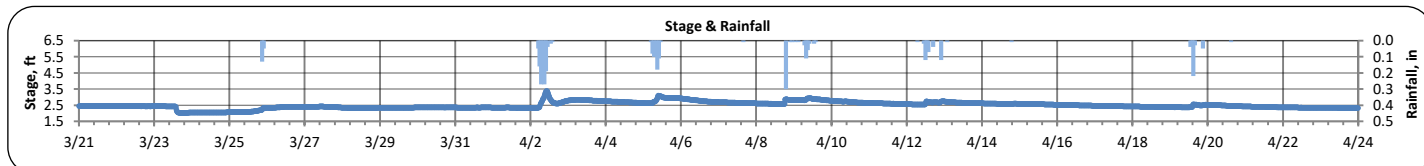
- Activity at Forest Lake, upstream of the GILA station, caused a decrease in stage from March 23<sup>rd</sup>-26<sup>th</sup>, which was observed at all three of the Gills Creek stations. This activity caused slight impacts to the monitored water quality parameters at each of the stations.
- The specific conductivity significantly increased on April 16<sup>th</sup> at the GILB station. This was also observed downstream at the GILC station from April 16<sup>th</sup>-17<sup>th</sup>.

### *Flow Measurements*

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

**Gills Creek A (March 21, 2019 -- April 24, 2019)**

PARAMETER	DESCRIPTION	CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
			MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STREAM NAME:	Gills Creek	STAGE (FT):	2.0	3.4	2.5	2.5	0.2
LOCATION:	Forest Drive Bridge	TEMPERATURE (°F):	52	75	64	65	5
ADDRESS:	4840 Forest Drive, Columbia, SC 29206	TURBIDITY (NTU):	2	132	4	6	10
COORDINATES:	34.019826, -80.963566	pH:	6.3	6.8	6.6	6.6	0.1
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	SPECIFIC CONDUCTIVITY (mS/cm):	0.040	0.067	0.047	0.048	0.004
NEIGHBORING LANDUSE:	Residential and commercial	DISSOLVED OXYGEN (mg/L):	7.2	10.3	8.8	8.8	0.6
APPROX. DRAINAGE AREA:	48 square miles						
SPATIAL LOCATION:	Most upstream site						
TOTAL NO. STORMS OVER 0.1 INCH:	8						
MAX. DAILY RAINFALL:	1.2 inches						
TOTAL RAINFALL (FOR PERIOD):	3.3 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 (March 21, 2019 -- April 24, 2019)**

**Explanation of Statistics:**

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

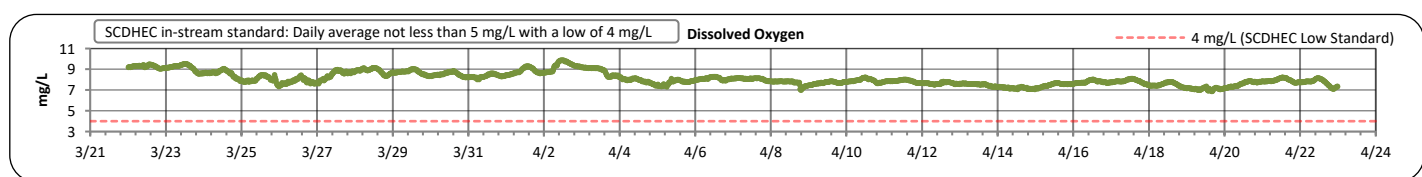
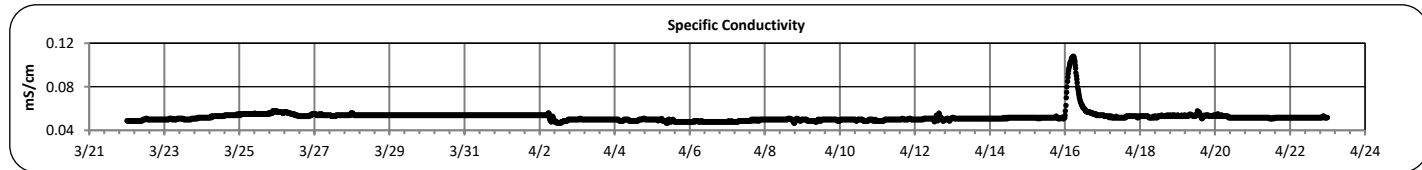
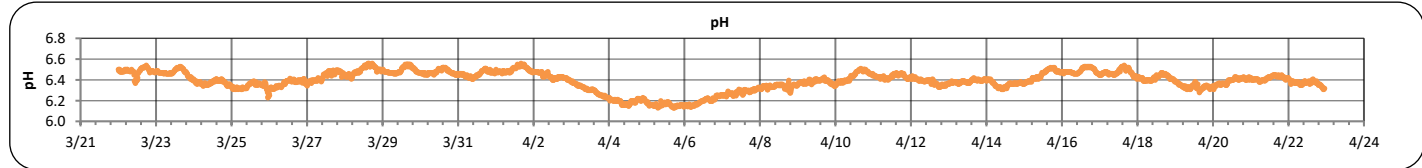
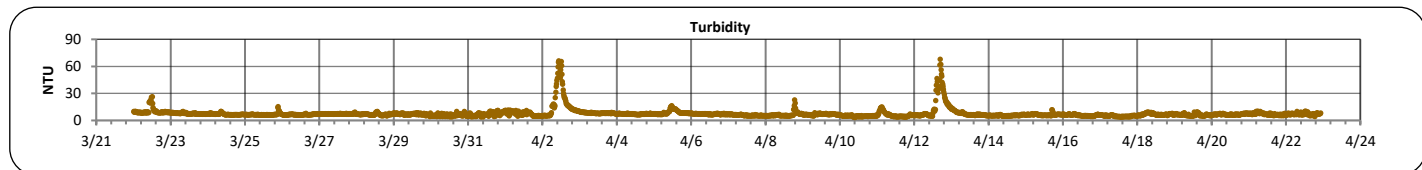
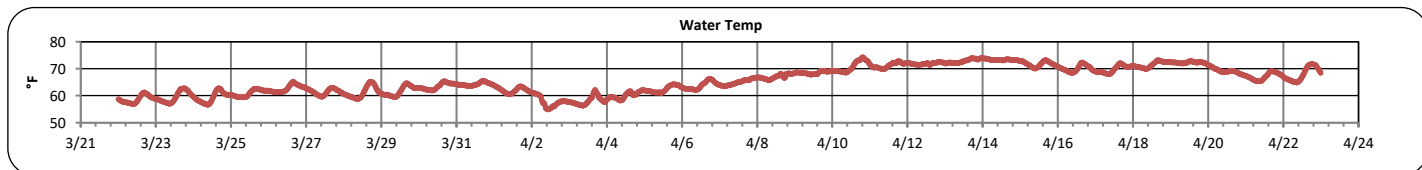
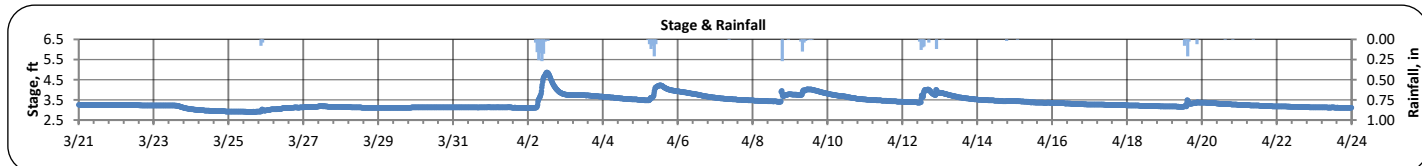
**Sampled Data:**

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

Notes:

**Gills Creek B (March 21, 2019 -- April 24, 2019)**

PARAMETER	DESCRIPTION	CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
			MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STREAM NAME:	Gills Creek	STAGE (FT):	2.9	4.9	3.3	3.4	0.3
LOCATION:	Devine Street bridge	TEMPERATURE (°F):	55	74	65	66	5
ADDRESS:	4716 Devine Street Columbia, SC 29209	TURBIDITY (NTU):	3	68	7	8	5
COORDINATES:	33.989656, -80.97433	pH:	6.1	6.6	6.4	6.4	0.1
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	SPECIFIC CONDUCTIVITY (mS/cm):	0.047	0.108	0.052	0.052	0.005
NEIGHBORING LANDUSE:	Residential and commercial	DISSOLVED OXYGEN (mg/L):	6.9	9.9	7.9	8.1	0.6
APPROX. DRAINAGE AREA:	59 square miles						
SPATIAL LOCATION:	Middle site						
TOTAL NO. STORMS OVER 0.1 INCH:	8						
MAX. DAILY RAINFALL:	1.1 inches						
TOTAL RAINFALL (FOR PERIOD):	3.3 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 (March 21, 2019 -- April 24, 2019)**

**Explanation of Statistics:**

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

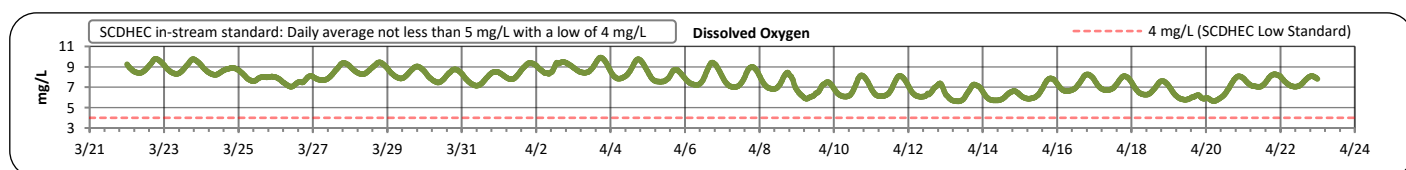
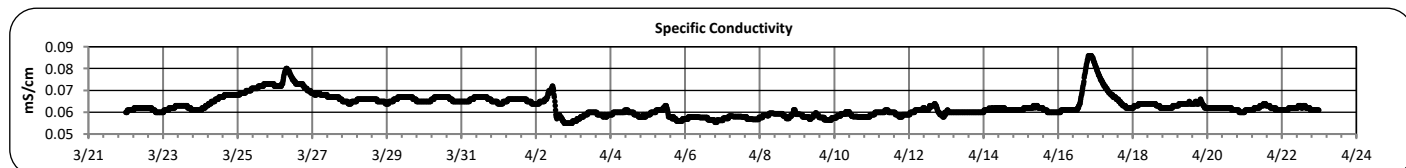
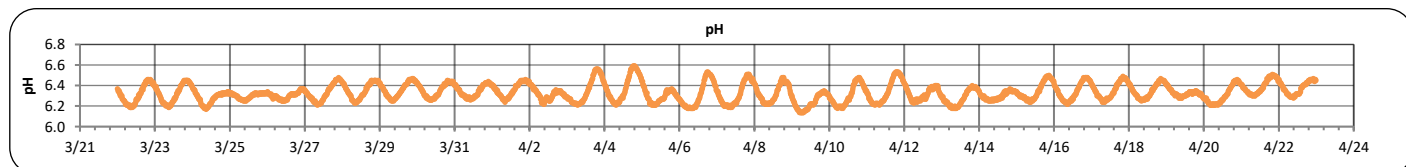
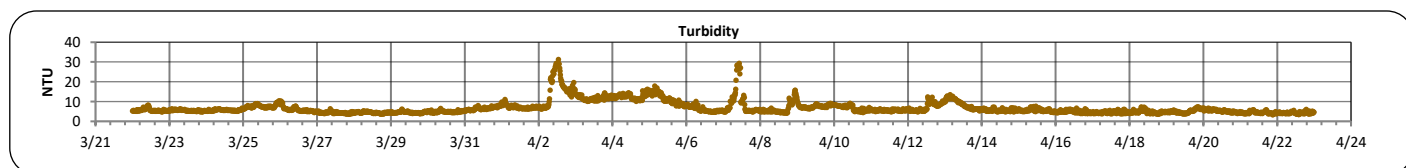
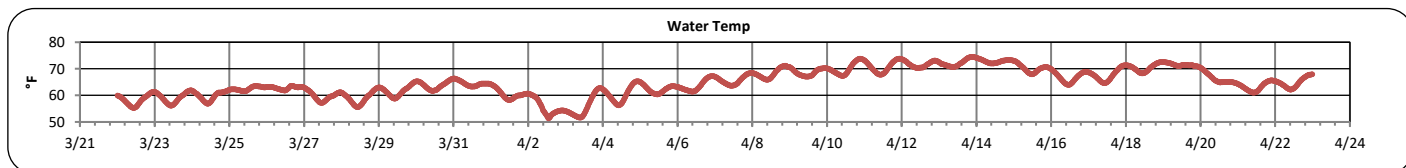
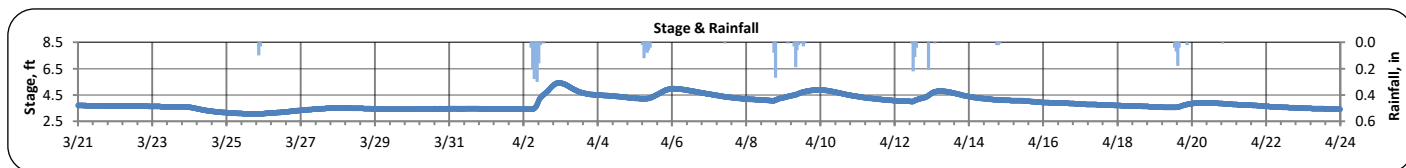
**Sampled Data:**

Analyte (units)	Sample 1		Sample 2		Sample 3		Sample 4	
	4/2/2019		4/2/2019		4/2/2019			
	Time	Results	Time	Results	Time	Results	Time	Results
<i>Escherichia coli</i> (MPN/100mL)	10:53	3446	11:54	3444	13:10	3106		
Total Suspended Solids (mg/L)	10:53	116	11:54	88	13:10	42		
Total Phosphorus (mg/L)	10:53	0.21	11:54	0.11	13:10	0.046		
Total Nitrogen (mg/L)	10:53	1.3	11:54	1.26	13:10	0.96		

Notes: Samples were collected during a wet weather event.

**Gills Creek C (March 21, 2019 -- April 24, 2019)**

PARAMETER	DESCRIPTION	CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
			MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STREAM NAME:	Gills Creek	STAGE (FT):	3.1	5.4	3.8	3.9	0.5
LOCATION:	Bluff Road bridge	TEMPERATURE (°F):	51	75	64	65	5
ADDRESS:	3009 Bluff Rd. Columbia, SC 29209						
COORDINATES:	33.948043, -80.9889	TURBIDITY (NTU):	3	31	6	7	3
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen						
NEIGHBORING LANDUSE:	Residential and commercial	pH:	6.1	6.6	6.3	6.3	0.1
APPROX. DRAINAGE AREA:	64 square miles						
SPATIAL LOCATION:	Most downstream site	SPECIFIC CONDUCTIVITY (mS/cm):	0.055	0.086	0.062	0.063	0.005
TOTAL NO. STORMS OVER 0.1 INCH:	8						
MAX. DAILY RAINFALL:	1.21 inches	DISSOLVED OXYGEN (mg/L):	5.6	9.9	7.8	7.7	1.0
TOTAL RAINFALL (FOR PERIOD):	3.5 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 (March 21, 2019 -- April 24, 2019)**

**Explanation of Statistics:**

<b>MINIMUM OBSERVED</b>	The minimum of the values recorded by the datasonde in 15 minute intervals.
<b>MAXIMUM OBSERVED</b>	The maximum of the values recorded by the datasonde in 15 minute intervals.
<b>MEDIAN OBSERVED</b>	The median of all the values recorded by the datasonde in 15 minute intervals.
<b>MEAN OBSERVED</b>	The average of all the values recorded by the datasonde in 15 minute intervals.
<b>STANDARD DEVIATION</b>	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
<i>Escherichia coli</i> (MPN/100mL)								
Total Suspended Solids (mg/L)								
Total Phosphorus (mg/L)								
Total Nitrogen (mg/L)								

Notes: