Gills Creek Monitoring Sites

Data Gaps

- The Gills Creek watershed was severely impacted by the October flood event. During that event, the sonde at GILA became lodged in the stilling well, held in place by small pebbles that had entered the stilling well during the flood event. With high stage at that station for several weeks following the storm, the sonde could not be retrieved until November 5th. At this time, the sonde was calibrated and returned to the field on November 6th.
- The electronics at the GILB station were damaged during the October flood event. Work was performed on this equipment on October 27th, during which time the CS450 stage data experienced a planned interruption for a short period of time.
- The GILC station stilling well was damaged during the October flood. Sections of this station will need to be reconstructed before the GILC sonde can be safely and securely deployed again. The sonde was not deployed during this period, and no data is reported.

SCDHEC Standards

- The GILA and GILB stations did not record any violations of the SCDHEC DO standards. The stations recorded average DO concentrations of 8.7 and 8.6 mg/L, well above the daily average value of 5 mg/L.
- The pH standard was not violated at either the GILA or GILB station during this deployment period.

Storm Events

- Several small storms were recorded during this deployment period. Rainfall totals of 4.4 and 4.9 inches were noted at the GILA and GILB stations, respectively, during this deployment period.
- Both the Forest Lake and Lake Katherine dams were drained in response to DHEC's emergency order that lake levels be lowered. This caused more rapid storm event responses to be noted in the Gills Creek watershed, since these impoundments were note operating under typical conditions.

Potential Illicit Discharges and Abnormal Events

- No suspected illicit discharge events were recorded
- On October 23th, the stage at the GILA station rapidly decreased while the pH and specific conductivity increased and the DO dropped. These changes were likely caused by an operation change at the outlet structure of Forest Lake. During this period of time, it appears that most of the flow moving past the GILA station was originating from the Eightmile Branch tributary. It appears that the water quality in this branch is significantly different from the water quality of Gills Creek as it leaves Forest Lake. These changes were also noted downstream at the GILB station, though to a lesser degree.

City of Columbia, SC Stormwater Management
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Continuous Water Quality Monitoring Periodic Report

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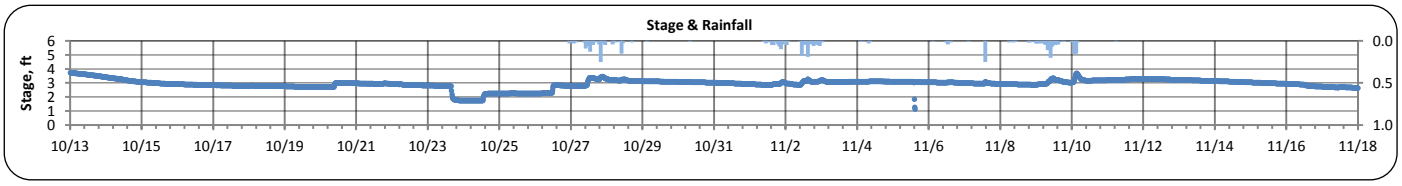
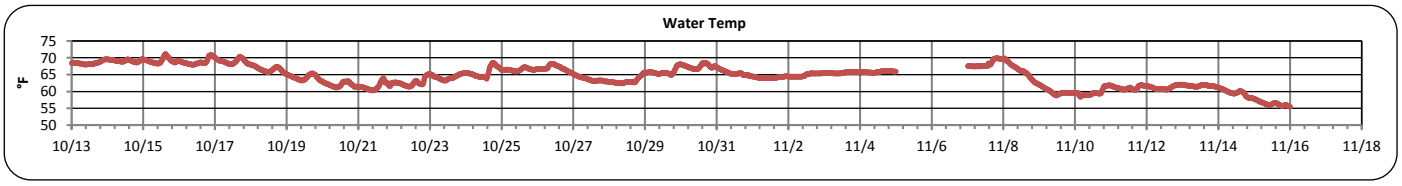
DESIGN | GEOSPATIAL | INFRASTRUCTURE

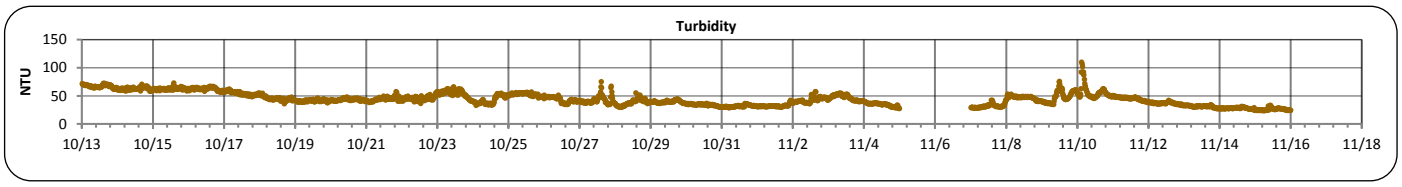
Gills Creek A (October 13, 2015 -- November 17, 2015)

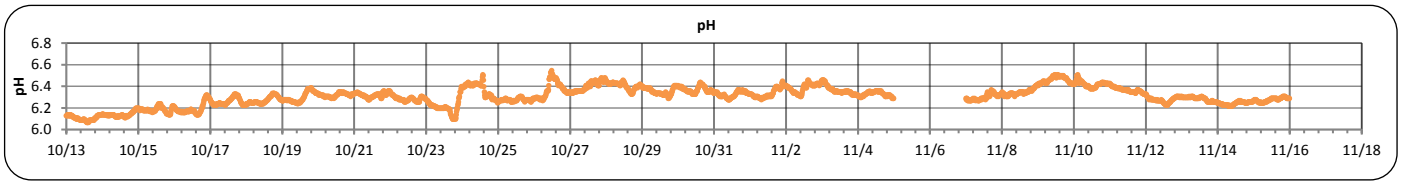
PARAMETER	DESCRIPTION
STREAM NAME:	Gills Creek
LOCATION:	Forest Drive Bridge
ADDRESS:	4840 Forest Drive, Columbia, SC 29206
COORDINATES:	34.019826, -80.963566
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen
NEIGHBORING LANDUSE:	Residential and commercial
APPROX. DRAINAGE AREA:	48 square miles
SPATIAL LOCATION:	Most upstream site
TOTAL NO. STORMS OVER 0.1 INCH:	8
MAX. DAILY RAINFALL:	0.9 inches
TOTAL RAINFALL (FOR PERIOD):	4.4 inches

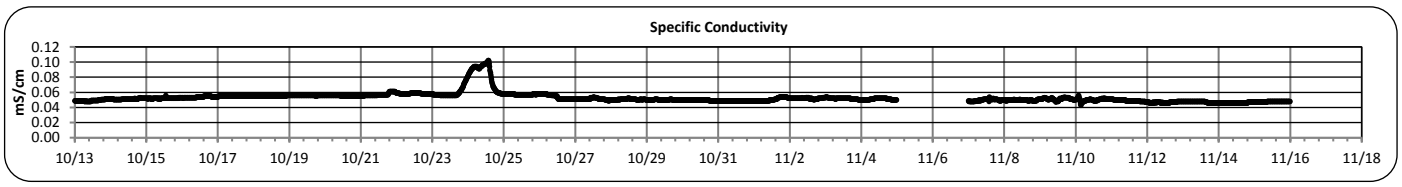
CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
	MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STAGE (FT):	1.1	3.7	3.0	3.0	0.3
TEMPERATURE (°F):	56	71	65	65	3
TURBIDITY (NTU):	24	110	43	44	11
pH:	6.1	6.6	6.3	6.3	0.1
SPECIFIC CONDUCTIVITY (mS/cm):	0.043	0.102	0.051	0.053	0.007
DISSOLVED OXYGEN (mg/L):	5.3	10.0	8.7	8.7	0.7

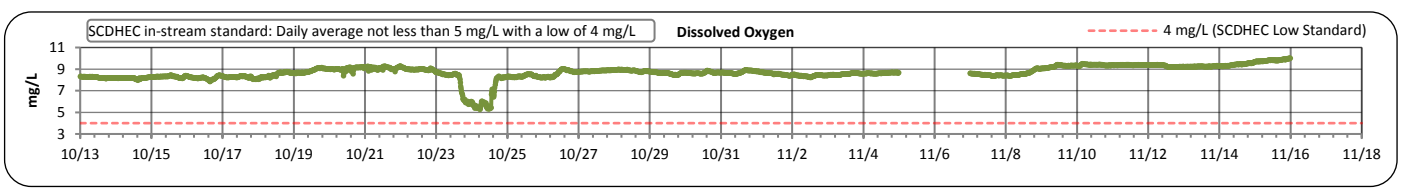












Note: Data gaps appear when the sonde is removed for calibration or when the flow depth is below the sensors

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Continuous Water Quality
Monitoring Periodic Report

Gills Creek A (October 13, 2015 -- November 17, 2015)

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	
	10/27/2015							
	Time	Results	Time	Results	Time	Results	Time	Results
Escherichia coli (MPN/100mL)	10:51	786						
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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City of Columbia, SC Stormwater Management — Partnering for clean waterways

Continuous Water Quality Monitoring Periodic Report

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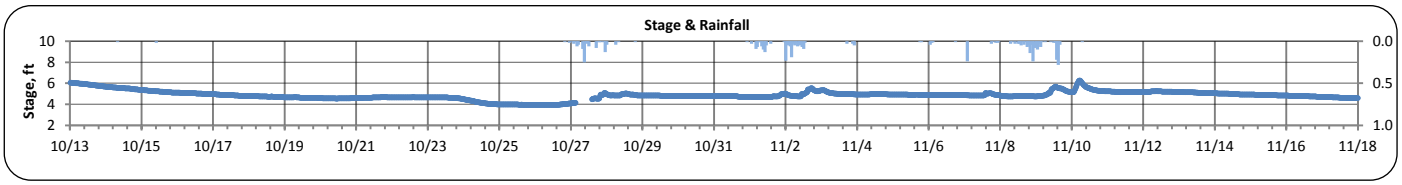
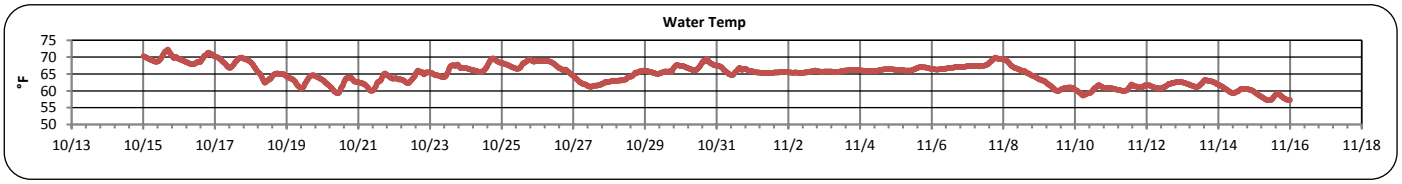
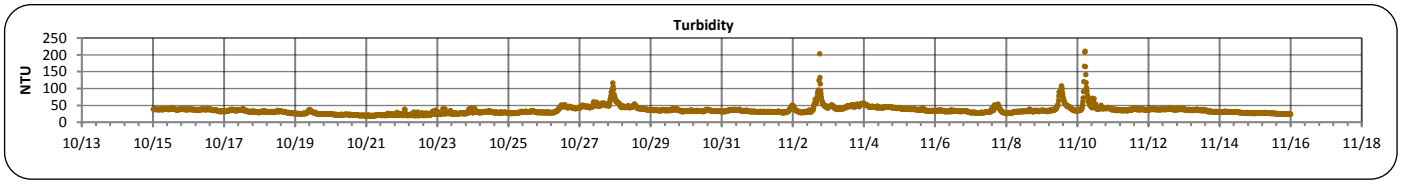
Gills Creek B (October 13, 2015 -- November 17, 2015)

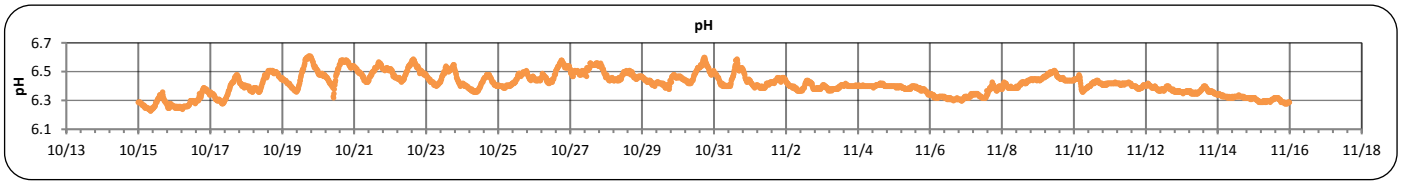
PARAMETER	DESCRIPTION
STREAM NAME:	Gills Creek
LOCATION:	Devine Street bridge
ADDRESS:	4716 Devine Street Columbia, SC 29209
COORDINATES:	33.989656, -80.97433
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen
NEIGHBORING LANDUSE:	Residential and commercial
APPROX. DRAINAGE AREA:	59 square miles
SPATIAL LOCATION:	Middle site
TOTAL NO. STORMS OVER 0.1 INCH:	7
MAX. DAILY RAINFALL:	1.1 inches
TOTAL RAINFALL (FOR PERIOD):	4.9 inches

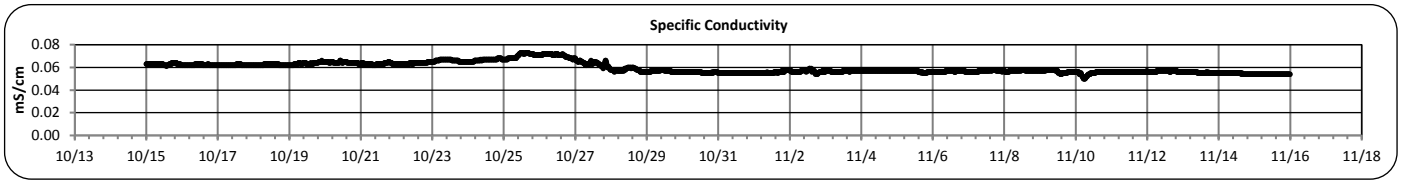
CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
	MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STAGE (FT):	4.0	6.3	4.9	4.9	0.4
TEMPERATURE (°F):	57	72	66	65	3
TURBIDITY (NTU):	19	211	34	36	13
pH:	6.2	6.6	6.4	6.4	0.1
SPECIFIC CONDUCTIVITY (mS/cm):	0.05	0.073	0.057	0.060	0.005
DISSOLVED OXYGEN (mg/L):	7.4	9.6	8.6	8.6	0.5

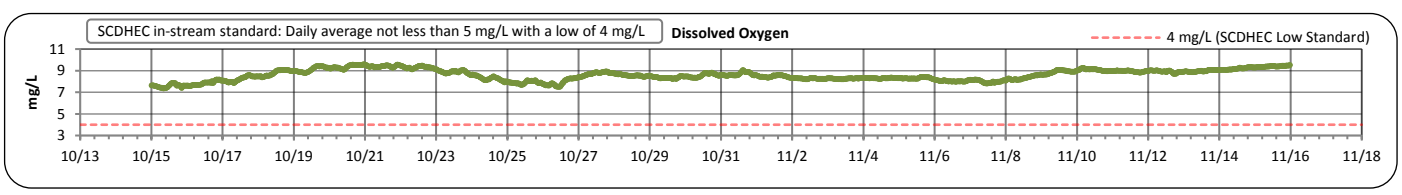












Note: Data gaps appear when the sonde is removed for calibration or when the flow depth is below the sensors

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Continuous Water Quality
Monitoring Periodic Report

Gills Creek B (October 13, 2015 -- November 17, 2015)

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	
	10/27/2015		10/27/2015					
	Time	Results	Time	Results	Time	Results	Time	Results
Escherichia coli (MPN/100mL)	11:09	2,842	12:45	1,096				
Total Suspended Solids (mg/L)	11:09	34.3	12:45	38				
Total Phosphorus (mg/L)	11:09	0.063	12:45	0.067				
Total Nitrogen (mg/L)	11:09	0.73	12:45	1.06				

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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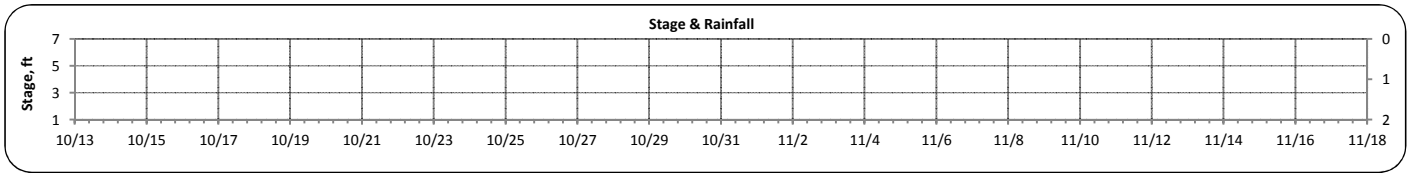
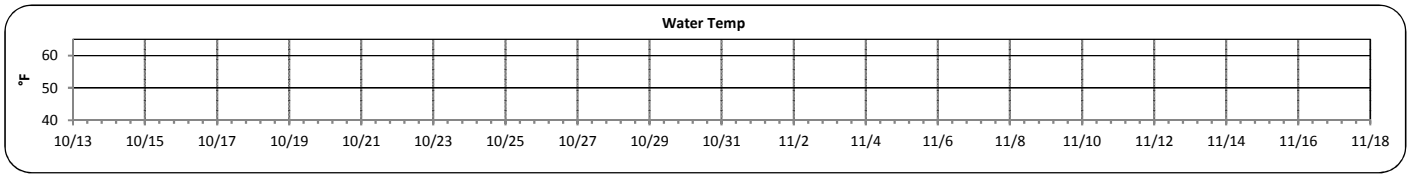
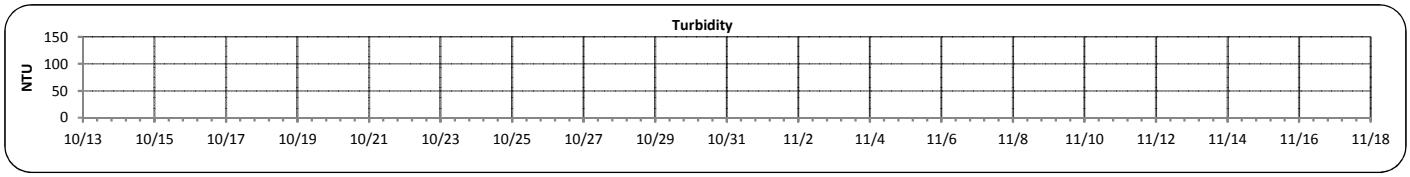
Gills Creek C (October 13, 2015 -- November 17, 2015)

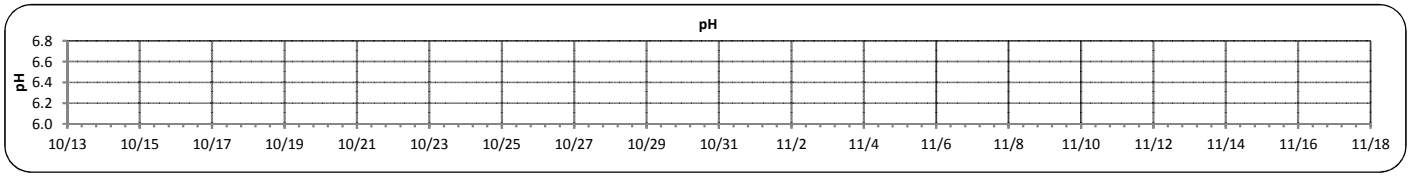
PARAMETER	DESCRIPTION
STREAM NAME:	Gills Creek
LOCATION:	Bluff Road bridge
ADDRESS:	3009 Bluff Rd. Columbia, SC 29209
COORDINATES:	33.948043, -80.9889
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen
NEIGHBORING LANDUSE:	Residential and commercial
APPROX. DRAINAGE AREA:	64 square miles
SPATIAL LOCATION:	Most downstream site
TOTAL NO. STORMS OVER 0.1 INCH:	0
MAX. DAILY RAINFALL:	0 inches
TOTAL RAINFALL (FOR PERIOD):	0.0 inches

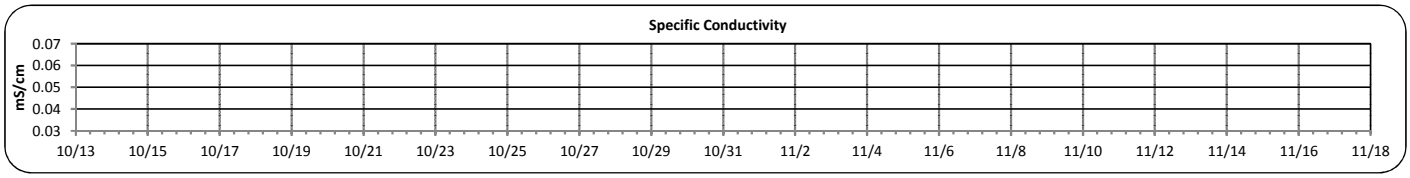
CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
	MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STAGE (FT):					
TEMPERATURE (°F):					
TURBIDITY (NTU):					
pH:					
SPECIFIC CONDUCTIVITY (mS/cm):					
DISSOLVED OXYGEN (mg/L):					

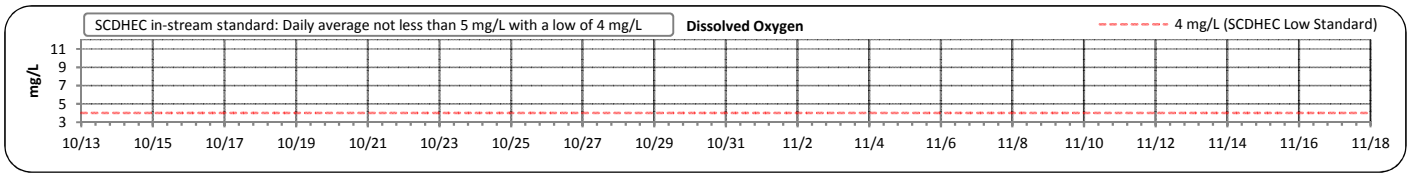












Note: Data gaps appear when the sonde is removed for calibration or when the flow depth is below the sensors

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Continuous Water Quality
Monitoring Periodic Report

Gills Creek C (October 13, 2015 -- November 17, 2015)

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: This station was damaged during the flood event in October and has not been reinstalled. There is no continuous monitoring or grab sample data to be reported for this reporting period.

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

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