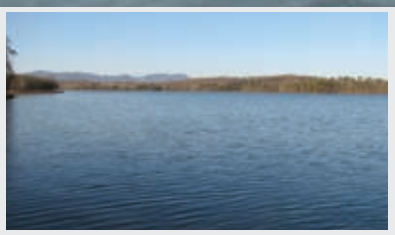
SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

WATERSHED WATER QUALITY ASSESSMENT

BROAD RIVER BASIN


DECEMBER 2007

Watershed Water Quality Assessment

Broad River Basin

South Carolina Department of Health and Environmental Control

Bureau of Water

2600 Bull Street

Columbia, SC 29201

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PREFACE

In 1993, the South Carolina Department of Health and Environmental Control (SCDHEC) published the first in a series of five watershed management documents. The first in that series, Watershed Water Quality Management Strategy: Savannah-Salkehatchie Basin, communicated SCDHEC's innovative watershed approach, summarizing water programs and water quality in the basins. The approach continues to evolve and improve.

The watershed documents facilitate broader participation in the water quality management process. Through these publications, SCDHEC shares water quality information with internal and external partners, providing a common foundation for water quality improvement efforts at the local watershed or large-scale, often interstate, river basin level.

Water quality data from the Broad River Basin was collected during 2000 through 2004 and assessed during this third five-year watershed management cycle. This updated atlas provides summary information on a watershed basis, as well as geographical presentations of all permitted watershed activities. A waterbody index and facility indices allow the reader to locate information on specific waters and facilities of interest.

A brief summary of the water quality assessments included in the body of this document is provided following the Table of Contents. This summary lists all waters within the Broad River Basin that fully support recreational and aquatic life uses, followed by those waters not supporting uses. In addition, the summaries list changes in use support status; those that have improved or degraded over the five years since the last strategy was written. More comprehensive information can be found in the individual watershed sections. The information provided is accurate to the best of our knowledge at the time of writing and will be updated in five years.

General information on Broad River Basin Watershed Protection and Restoration Strategies can be found under that section on page 26, and more detailed information is located within the individual watershed evaluations.

A major change to this newest assessment is the use of the 2005 USDA NRCS 8-, 10-, 12-digit hydrologic unit code for South Carolina. This more accurate hydrologic unit code's use changes numerous boundaries in the basin and introduces a new numbering system for the watersheds. For comparison, each watershed evaluation will state the prior hydrologic code.

As SCDHEC continues basinwide and statewide water quality protection and improvement efforts, we are counting on the support and assistance of all stakeholders in the Broad River Basin to participate in water quality improvements. We look forward to working with you.

If you have questions or comments regarding this document, or if you are seeking further information on the water quality in the Broad Basin, please contact:

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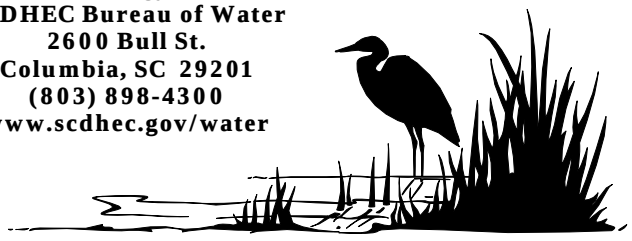

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Contributing photographers to the front cover include:
Friends of Lake Robinson– Tyger River
Friends of Lake Robinson– Lake Robinson
Columbia Rowing Club – Broad River

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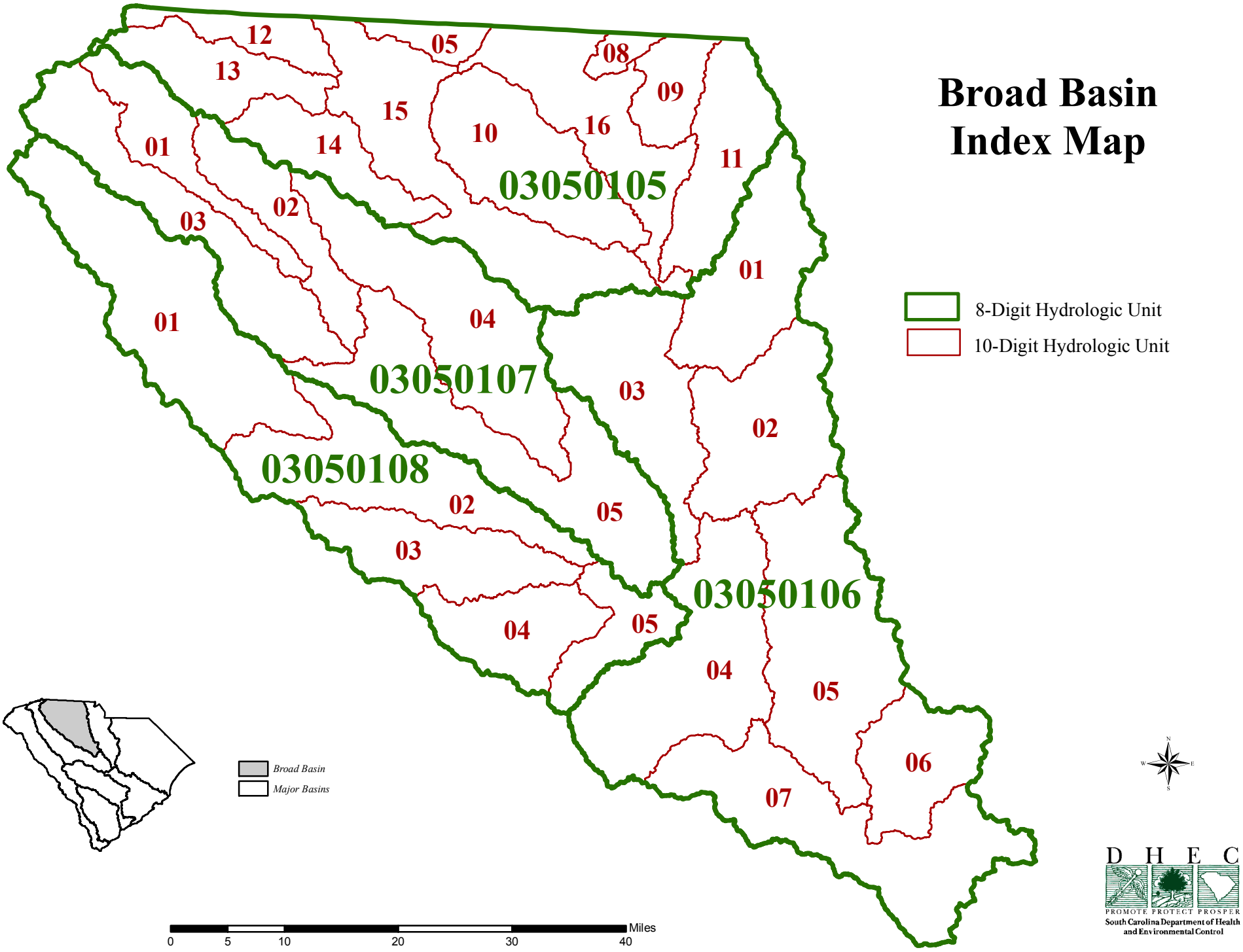
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South Carolina Department of Health
and Environmental Control

Water Quality Assessment Summary

Broad River Basin

TERMS USED IN TABLES

AQUATIC LIFE USE SUPPORT (AL) - The degree to which aquatic life is protected is assessed by comparing important water quality characteristics and the concentrations of potentially toxic pollutants with standards. Aquatic life use support is based on the percentage of standards excursions at a sampling site.

For **dissolved oxygen** and **pH**:

If the percentage of standard excursions is 10% or less, then uses are ***fully supported***.

If the percentage of standard excursions is greater than 10% and less than or equal to 25%, then uses are ***partially supported***.

If the percentage of standard excursions is greater than 25%, uses are ***not supported*** (see p.12 for further information).

For **toxins** (heavy metals, priority pollutants, chlorine, ammonia):

If the acute aquatic life standard for any individual toxicant is not exceeded more than once, uses are ***fully supported***.

If the acute aquatic life standard is exceeded more than once (i.e. $\geq$ 2), but is less than or equal to 10% of the samples, uses are ***partially supported***.

If the acute aquatic life standard is exceeded more than once (i.e.$\geq$2), and is greater than 10% of the samples, aquatic life uses are ***not supported*** (see p.12 for further information).

For **turbidity** and waters with **numeric total phosphorus, total nitrogen, and chlorophyll-a**:

If the percentage of standard excursions is 25% or less, then uses are ***fully supported***.

If the percentage of standard excursions is greater than 25%, then uses are ***not supported*** (see p.13 for further information).

RECREATIONAL USE SUPPORT (REC) - The degree to which the swimmable goal of the Clean Water Act is attained (recreational use support) is based on the frequency of fecal coliform bacteria excursions, defined as greater than 400/100 ml for all surface water classes.

If 10% or less of the samples are greater than 400/100 ml, then recreational uses are said to be ***fully supported***.

If the percentage of standards excursions is greater than 10% and less than or equal to 25%, then recreational uses are said to be ***partially supported***.

If the percentage of standards excursions is greater than 25%, then recreational uses are said to be ***nonsupported*** (see p.14 for further information).

Excursion - The term excursion is used to describe a measurement that does not comply with the appropriate water quality standard.

Table 1. Fully Supported Sites in the Broad River Basin

***** = Station not evaluated for Recreational Support

Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03050108-01	Abner Creek	B-792*		
	Durbin Creek	BE-022 *		
03050108-02	Warrior Creek	B-742*		
	Cedar Shoals Creek	B-785*		
03050108-03	Duncan Ck Reservoir 6B	B-735		
03050107-02	Lake Cooley	B-348		Decreasing Dissolved Oxygen
03050107-03	Lake Robinson	RL-04361		
		RL-03343		
		RL-02327		
		RL-02453		
		RL-04365		
		RL-02321		
		RL-01025		
		CL-100		
	Lake Cunningham	B-341/ RL-03347		Decreasing Dissolved Oxygen
	South Tyger River	B-149		Decreasing Dissolved Oxygen; Increasing pH
		RS-01048		
	Maple Creek	B-625*		
	Bens Creek	B-782*		

Table 1. Fully Supported Sites in the Broad River Basin

***** = Station not evaluated for Recreational Support

Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03050107-03 (Continued)	Ferguson Creek	B-787*		
03050107-04	Lake Craig	RL-01005		
		RL-01035		
		CL-033		
03050107-05	Tyger River	B-051		Increasing BOD_5
	Dutchman Creek	B-733*		
03050105-08	Buffalo Creek	B-740*		
03050105-10	Lake Thicketty	RL-02301		
		B-342		
		RL-03457		
	Thicketty Creek	RS-01028		
03050105-11	Bullock Creek	B-739*		
	Lake York	B-737		
	Clark Creek	B-157*		
03050105-12	Vaughn Creek	B-099-7*		
	Lake Lanier	B-099A	Decreasing Total Phosphorus	Decreasing Dissolved Oxygen; Increasing pH, Fecal Coliform
		B-099B	Decreasing Total Phosphorus	
	North Pacolet River	B-719		

Table 1. Fully Supported Sites in the Broad River Basin

***** = Station not evaluated for Recreational Support

Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03050105-12 (Continued)	Obed Creek	B-791*		
03050105-13	South Pacolet River	B-720*		
	Lake Bowen	B-340		
		B-339		Increasing BOD_5, Turbidity, Total Phosphorus, Total Nitrogen, Fecal Coliform; Decreasing pH
	Spartanburg Reservoir #1	B-113	Decreasing BOD_5, Turbidity	
03050105-15	Pacolet River	B-163A	Decreasing BOD_5, Turbidity; Increasing Dissolved Oxygen	Increasing Total Phosphorus, pH
		B-331	Decreasing Total Phosphorus; Increasing Dissolved Oxygen	
	Lake Blalock	RL-02323		
		RL-01019		
		RL-04367		
		RL-04389		
		RL-04363		
		B-347		
	Buck Creek	B-783*		
03050105-16	Ross Creek	RS-03352		
		B-789*		
	Bowen River	B-788*		

Table 1. Fully Supported Sites in the Broad River Basin

***** = Station not evaluated for Recreational Support

Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03050105-16 (continued)	Cherokee Creek	B-056	Decreasing Total Phosphorus, Total Nitrogen, Fecal Coliform	
	Lake Cherokee	B-343		
	Guyonmoore Creek	B-330		Increasing BOD_5; Decreasing Dissolved Oxygen
		RS-02482		
03050106-01	Susybole Creek	RS-03349		
03050106-02	Chester State Park Lake	CL-023		
03050106-03	Lake John D. Long	RL-01010		
		B-344		
	Gregorys Creek	B-335		Increasing BOD_5, Total Nitrogen
	Neals Creek	B-778*		
03050106-04	Broad River	B-047	Increasing Dissolved Oxygen	Increasing pH
	Cannons Creek	B-751*		
	Monticello Reservoir	B-328	Decreasing BOD_5, Turbidity, Total Phosphorus, Total Nitrogen, Fecal Coliform	Increasing pH
		RL-04370		
		RL-04374		
03050106-07	Wateree Creek	B-801*		

Table 2. Impaired Sites in the Broad River Basin

REC=Recreational; AL=Aquatic Life; DW= Drinking Water; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation underway

Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03050108-01	Enoree River	BE-001 [TI]	AL	NS	Macroinvertebrates Zinc	Decreasing Turbidity	
			REC	NS	Fecal Coliform		
		BE-015 [TI]	REC	NS	Fecal Coliform		Increasing pH
		BE-017 [TI]	AL	NS	Macroinvertebrates	Increasing Dissolved Oxygen; Decreasing BOD_5, Total Phosphorus, Turbidity, Fecal Coliform	Increasing pH
			REC	NS	Fecal Coliform		
		BE-018 [TI]	REC	PS	Fecal Coliform	Increasing Dissolved Oxygen	Increasing pH
		BE-019*	AL	PS	Macroinvertebrates		
		B-037 [TI]	REC	NS	Fecal Coliform	Decreasing Turbidity	
		B-040	REC	NS	Fecal Coliform		Increasing Fecal Coliform
	Beaverdam Creek	BE-039 [TI]	AL	PS	pH	Decreasing BOD_5, Turbidity	
			REC	NS	Fecal Coliform		
	Buckhorn Creek	B-795*	AL	PS	Macroinvertebrates		
	Mountain Creek	B-186 [TI]	REC	NS	Fecal Coliform		Increasing pH
		BE-008 *	AL	PS	Macroinvertebrates		
	Princess Creek	B-192 [TI]	AL	NS	Macroinvertebrates	Decreasing Turbidity	Increasing pH, Fecal Coliform
			REC	NS	Fecal Coliform		

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Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03050108-01 (Continued)	Brushy Creek	BE-035[TD]	REC	NS	Fecal Coliform		Increasing pH
		BE-009[TD]	AL	PS	Macroinvertebrates pH		Increasing pH
			REC	NS	Fecal Coliform		
	Rocky Creek	BE-007 [TI]	AL	PS	Macroinvertebrates		Increasing pH
			REC	NS	Fecal Coliform		
	Gilder Creek	BE-040 [TI]	REC	NS	Fecal Coliform		Increasing pH
		B-241 [TI]	REC	NS	Fecal Coliform		Increasing pH
		BE-020 [TI]	AL	PS	Macroinvertebrates		Increasing pH
			REC	NS	Fecal Coliform		
	Horsemen Creek	BE-793*	AL	PS	Macroinvertebrates		
	Lick Creek	B-038 [TI]	REC	NS	Fecal Coliform	Decreasing BOD_5	Increasing Turbidity
	Durbin Creek	B-035 [TI]	REC	NS	Fecal Coliform	Decreasing Turbidity	
		B-097 [TI]	AL	PS	pH		Decreasing pH; Increasing BOD_5, Fecal Coliform
			REC	NS	Fecal Coliform		
03050108-02	Beaverdam Creek	B-246 [TI]	AL	NS	Macroinvertebrates Copper	Decreasing Total Nitrogen, Fecal Coliform	Increasing BOD_5
			REC	NS	Fecal Coliform		

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Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03050108-02 (Continued)	Enoree River	B-041 [TI]	REC	PS	Fecal Coliform	Decreasing Turbidity, Total Nitrogen, Fecal Coliform	
		B-053/ RS-03495 [TI]	AL	NS	Copper	Increasing Dissolved Oxygen	
			REC	PS	Fecal Coliform		
	Warrior Creek	B-150 [TI]	REC	NS	Fecal Coliform		Increasing BOD_5
03050108-03	Beards Fork Creek	B-231 [TI]	AL	PS	Dissolved Oxygen		Decreasing pH
			REC	NS	Fecal Coliform		
	Duncan Creek	RS-01057	REC	NS	Fecal Coliform		
		B-072 [TI]	REC	NS	Fecal Coliform	Increasing Dissolved Oxygen; Decreasing Turbidity, Fecal Coliform	Increasing pH
03050108-05	Kings Creek	B-799*	AL	PS	Macroinvertebrates		
	Enoree River	B-054 [TI]	AL	PS	Copper	Increasing Dissolved Oxygen; Decreasing BOD_5 Total Phosphorus, Fecal Coliform	Increasing pH
			REC	PS	Fecal Coliform		
03050107-01	Middle Tyger River	B-148 [TD]	REC	NS	Fecal Coliform	Increasing Dissolved Oxygen; Decreasing Turbidity, Total Phosphorus, Total Nitrogen	Increasing pH
		B-012 [TI]	REC	NS	Fecal Coliform	Decreasing Total Phosphorus, Fecal Coliform	Increasing BOD_5, Decreasing pH

Table 2. Impaired Sites in the Broad River Basin

REC=Recreational; AL=Aquatic Life; DW= Drinking Water; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation underway

Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03050107-01 (Continued)	Middle Tyger River (Continued)	B-014 [TI]	AL	NS	Copper	Decreasing Total Phosphorus, Fecal Coliform	Increasing BOD_5; Decreasing pH
			REC	PS	Fecal Coliform		
	Beaverdam Creek	B-784*	AL	PS	Macroinvertebrates		
03050107-02	North Tyger River	B-219 [TI]	AL	NS	Macroinvertebrates	Decreasing Turbidity, Total Phosphorus, Fecal Coliform	Decreasing Dissolved Oxygen; Increasing pH
		B-018A [TI]	AL	NS	Copper	Decreasing Turbidity	
			REC	NS	Fecal Coliform		
03050107-03	Mush Creek	B-317 [TD]	REC	NS	Fecal Coliform	Decreasing Turbidity, Total Nitrogen	
	South Tyger River	B-263 [TI]	REC	PS	Fecal Coliform	Decreasing Turbidity, Fecal Coliform; Increasing Dissolved Oxygen	
		B-005 [TI]	AL	NS	Copper	Decreasing Total Nitrogen; Increasing Dissolved Oxygen	
			REC	PS	Fecal Coliform		
		B-332 [TI]	REC	PS	Fecal Coliform	Decreasing Total Nitrogen	Decreasing pH
03050107-04	Fairforest Creek Tributary	B-321 [TI]	AL	NS	Macroinvertebrates pH, Nickel	Decreasing Turbidity, Total Phosphorus, Fecal Coliform	Decreasing pH
			REC	NS	Fecal Coliform		
	Fairforest Creek	B-020 [TI]	REC	NS	Fecal Coliform	Decreasing Turbidity	
		B-164 [TI]	REC	NS	Fecal Coliform	Decreasing Turbidity	Increasing BOD_5, Total Phosphorus, pH

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Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03050107-04 (Continued)	Fairforest Creek (continued)	B-021 [TI]	AL	PS	Macroinvertebrates	Decreasing Turbidity	
			REC	NS	Fecal Coliform		
		BF-007 [TI]	REC	NS	Fecal Coliform	Increasing Dissolved Oxygen	Increasing BOD_5, Turbidity
		BF-008 [TI]	REC	PS	Fecal Coliform		Decreasing Dissolved Oxygen; Increasing BOD_5
	Kelsey Creek	B-235 [TI]	REC	NS	Fecal Coliform		
	Lake Johnson	CL-035	AL	NS	Dissolved Oxygen, Total Phosphorus, pH, Chlorophyll-a		
	Mitchell Creek	B-199 [TI]	REC	NS	Fecal Coliform		Increasing Fecal Coliform
		B-781*	AL	PS	Macroinvertebrates		
	Toschs Creek	B-067A [TI]	REC	NS	Fecal Coliform	Decreasing Total Phosphorus	Decreasing pH
		B-067B [TI]	REC	NS	Fecal Coliform		Decreasing pH; Increasing BOD_5
03050107-05	Tyger River	B-008 [TI]	REC	PS	Fecal Coliform		Decreasing pH
		B-349	AL	NS	Copper		Increasing BOD_5
			REC	PS	Fecal Coliform		
	Jimmies Creek	B-019 [TI]	REC	NS	Fecal Coliform		
		B-786*	AL	PS	Macroinvertebrates		

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Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03050107-05 (Continued)	Tinker Creek	B-286 [TI]	REC	NS	Fecal Coliform		
		B-287 [TI]	AL	NS	pH, Turbidity		Decreasing Dissolved Oxygen
			REC	NS	Fecal Coliform		
		B-336 [TI]	REC	NS	Fecal Coliform		Decreasing Dissolved Oxygen; Increasing BOD_5
	Cane Creek	B-777*	AL	PS	Macroinvertebrates		
03050105-08	Buffalo Creek	B-119 [TD]	REC	PS	Fecal Coliform	Decreasing Total Phosphorus	
		B-057 [TD]	AL	PS	Copper	Decreasing Total Phosphorus, Fecal Coliform	
			REC	PS	Fecal Coliform		
03050105-09	Kings Creek	B-333	REC	PS	Fecal Coliform	Decreasing Total Phosphorus	Increasing Total Nitrogen
03050105-10	Irene Creek	B-059 [TD]	REC	NS	Fecal Coliform		Decreasing Dissolved Oxygen; Increasing BOD_5, Turbidity
	Thicketty Creek	B-095 [TD]	REC	PS	Fecal Coliform		
		B-133 [TD]	REC	NS	Fecal Coliform	Decreasing Total Phosphorus	Increasing BOD_5
		B-062 [TD]	AL	NS	Copper	Decreasing Total Phosphorus	Decreasing Dissolved Oxygen; Increasing BOD_5
			REC	PS	Fecal Coliform		

Table 2. Impaired Sites in the Broad River Basin

REC=Recreational; AL=Aquatic Life; DW= Drinking Water; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation underway

Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03050105-10 (Continued)	Little Thicketty Creek	RS-04376	AL	PS	Macroinvertebrates		
			REC	NS	Fecal Coliform		
	Linestone Creek	B-128 [TD]	REC	NS	Fecal Coliform		Decreasing Dissolved Oxygen; Increasing Turbidity
	Gilkey Creek	B-334 [TD]	AL	PS	Macroinvertebrates		Increasing BOD_5, Total Nitrogen
03050105-11	Bullock Creek	B-159 [TD]	REC	NS	Fecal Coliform		Decreasing Dissolved Oxygen; Increasing BOD_5
	Clark Fork	B-325 [TD]	AL	PS	Dissolved Oxygen		
			REC	NS	Fecal Coliform		
	Long Branch	B-326 [TD]	REC	PS	Fecal Coliform		Increasing BOD_5, Turbidity, Fecal Coliform
03050105-12	North Pacolet River	B-026 [TD]	REC	NS	Fecal Coliform	Decreasing BOD_5, Turbidity, Total Phosphorus, Total Nitrogen	Decreasing Dissolved Oxygen, pH
		B-126 [TD]	REC	PS	Fecal Coliform	Decreasing Turbidity, Total Phosphorus	Increasing BOD_5; Decreasing pH
	Page Creek	B-301 [TD]	REC	NS	Fecal Coliform		Decreasing Dissolved Oxygen, pH
	Obed Creek	RS-03514	AL	PS	Macroinvertebrates		
			REC	PS	Fecal Coliform		

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Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03050105-13	South Pacolet River	B-302 TD	REC	PS	Fecal Coliform	Decreasing Turbidity, Total Phosphorus	
	Spivey Creek	B-103 TD	REC	PS	Fecal Coliform	Decreasing Turbidity	
	Motlow Creek	B-790*	AL	PS	Macroinvertebrates		
03050105-14	Lawsons Fork Creek	B-221 TD	REC	NS	Fecal Coliform	Decreasing BOD_5, Turbidity	Decreasing pH
		B-277 TD	REC	NS	Fecal Coliform	Decreasing BOD_5, Increasing Dissolved Oxygen	
		B-278 TD	REC	NS	Fecal Coliform	Decreasing Fecal Coliform	
		BL-005 TD	REC	PS	Fecal Coliform	Decreasing Turbidity, Fecal Coliform	
		BL-001 TD	AL	PS	Macroinvertebrates	Decreasing Turbidity	Increasing Total Nitrogen, Total Suspended Solids
			REC	NS	Fecal Coliform		
	Meadow Creek	RS-02320	REC	NS	Fecal Coliform		
		B-531*	AL	PS	Macroinvertebrates		
03050105-15	Pacolet River	B-028 TD	REC	PS	Fecal Coliform	Decreasing BOD_5, Total Phosphorus, Turbidity, Total Suspended Solids, Fecal Coliform	
		BP-001 TD	REC	PS	Fecal Coliform	Decreasing Turbidity, Fecal Coliform	

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Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03050105-15 (Continued)	Pacolet River (continued)	B-048 [TD]	REC	PS	Fecal Coliform	Decreasing Fecal Coliform	Increasing Total Nitrogen; Decreasing Dissolved Oxygen
	Lake Blalock	RL-03345	REC	PS	Fecal Coliform		
		RL-04461	AL	NS	Copper		
	Little Buck Creek	B-259 [TD]	REC	NS	Fecal Coliform	Decreasing Turbidity	
	Potter Branch	B-191 [TD]	AL	PS	Dissolved Oxygen, pH	Decreasing BOD_5, Total Phosphorus	
			REC	PS	Fecal Coliform		
03050105-16	Broad River	B-042 [TD]	AL	NS	Copper	Decreasing Fecal Coliform	Increasing BOD_5, Total Phosphorus, Total Nitrogen
			REC	PS	Fecal Coliform		
		B-044 [TD]	REC	PS	Fecal Coliform	Decreasing Fecal Coliform	Increasing BOD_5, Total Nitrogen; Decreasing Dissolved Oxygen
	Canoe Creek	B-088 [TD]	REC	NS	Fecal Coliform	Increasing Dissolved Oxygen	Increasing Fecal Coliform
	Lake Whelchel	RL-01029	AL	NS	Chlorophyll-a		
		RL-03341	AL	PS	pH		
	Cherokee Creek	B-679*	AL	PS	Macroinvertebrates		
	Peoples Creek	B-211 [TD]	REC	NS	Fecal Coliform		Decreasing pH

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Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03050105-16 (Continued)	Furnace Creek	B-100 [TD]	REC	PS	Fecal Coliform	Decreasing Total Phosphorus, Fecal Coliform	Decreasing pH; Increasing BOD_5
	Doolittle Creek	B-323 [TD]	REC	PS	Fecal Coliform		Increasing BOD_5, Decreasing Dissolved Oxygen, pH
03050106-01	Ross Branch	B-086 [TD]	AL	NS	Turbidity		
			REC	NS	Fecal Coliform		
	Turkey Creek	B-136 [TD]	AL	PS	Macroinvertebrates		Increasing BOD_5
			REC	NS	Fecal Coliform		
03050106-02	Dry Fork	B-074 [TD]	AL	PS	Dissolved Oxygen		Increasing BOD_5, Decreasing Dissolved Oxygen
			REC	NS	Fecal Coliform		
	Sandy River	B-075 [TD]	REC	NS	Fecal Coliform		Increasing BOD_5,, Total Nitrogen; Decreasing Dissolved Oxygen, pH
03050106-03	Meng Creek Tributary	B-243 [TD]	AL	PS	pH	Increasing Dissolved Oxygen; Decreasing BOD_5, Total Phosphorus, Fecal Coliform	
			REC	NS	Fecal Coliform		
	Meng Creek	B-064 [TD]	AL	PS	pH	Decreasing Total Phosphorus	Increasing BOD_5
			REC	NS	Fecal Coliform		

Table 2. Impaired Sites in the Broad River Basin

REC=Recreational; AL=Aquatic Life; DW= Drinking Water; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation underway

Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03050106-03 (Continued)	Browns Creek	B-155 TD	AL	PS	Macroinvertebrates		Increasing BOD_5
			REC	PS	Fecal Coliform		
	Clarks Creek	RS-04543	REC	NS	Fecal Coliform		
	Broad River	B-046 TD	AL	PS	Copper		Decreasing Dissolved Oxygen, pH
			REC	PS	Fecal Coliform		
03050106-04	McClures Creek	RS-04527	AL	PS	Macroinvertebrates		
			REC	NS	Fecal Coliform		
	Beaver Creek	B-143*	AL	PS	Macroinvertebrates		
	Hellers Creek	B-151*	AL	PS	Macroinvertebrates		
	Parr Reservoir	B-346	AL	NS	Total Phosphorus		
		B-345	AL	NS	Copper		Increasing BOD_5
	Cannons Creek	B-831*	AL	PS	Macroinvertebrates		
	Monticello Reservoir	B-327	AL	PS	pH	Decreasing Fecal Coliform	Increasing pH
	Mud Creek	RS-03343	REC	NS	Fecal Coliform		
03050106-05	Winnsboro Branch	B-123 TD	REC	NS	Fecal Coliform		Increasing pH
		B-077 TD	AL	NS	Copper	Decreasing BOD_5	Increasing Total Phosphorus
			REC	NS	Fecal Coliform		

Table 2. Impaired Sites in the Broad River Basin

REC=Recreational; AL=Aquatic Life; DW= Drinking Water; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation underway

Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03050106-05 (Continued)	Jackson Creek	B-102 [TD]	AL	NS	Macroinvertebrates Copper	Increasing Dissolved Oxygen	Increasing pH
			REC	PS	Fecal Coliform		
	Mill Creek	B-338 [TD]	REC	NS	Fecal Coliform	Decreasing Total Phosphorus	Increasing BOD_5
	Little River	B-145 [TD]	REC	NS	Fecal Coliform	Decreasing Fecal Coliform	Increasing pH
		B-350 [TD]	REC	PS	Fecal Coliform		Increasing $BOD_{5;}$, Turbidity, Total Nitrogen, pH
03050106-06	Big Cedar Creek	B-320/ [TD] RS-02453	REC	NS	Fecal Coliform	Increasing Dissolved Oxygen	Increasing $BOD_{5;}$, Total Nitrogen
03050106-07	Broad River	B-236	AL	NS	Copper	Decreasing Fecal Coliform	Increasing pH
		B-337 [TD]	REC	PS	Fecal Coliform		
	Broad River Diversion Canal	B-080	REC	PS	Fecal Coliform		
	Crims Creek Tributary	RS-03517	REC	NS	Fecal Coliform		
	Crims Creek	B-800*	AL	PS	Macroinvertebrates		
	Elizabeth Lake	B-110 [TD]	REC	PS	Fecal Coliform	Increasing Dissolved Oxygen	Increasing pH

Table 2. Impaired Sites in the Broad River Basin

REC=Recreational; AL=Aquatic Life; DW= Drinking Water; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation underway

Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03050106-07 (Continued)	Crane Creek	B-316 [TD]	AL	PS	Macroinvertebrates	Decreasing Turbidity, Fecal Coliform	Increasing pH
			REC	PS	Fecal Coliform		
	Smith Branch	B-280 [TD]	REC	NS	Fecal Coliform	Increasing Dissolved Oxygen; Decreasing Turbidity, Fecal Coliform	Increasing Total Phosphorus, pH

Table 3. Changes in Use Support Status

Broad River Basin Sites that Improved from 2000 to 2004

REC= Recreational; AL=Aquatic Life; FS=Fully Supported Standards; PS=Partially Supported Standards; NS=Nonsupported Standards

Watershed	Waterbody Name	Station #	Use	Status		Water Quality Indicator	
				2000	2004	2000	2004
03050108-01	Enoree River	BE-018	AL	PS	FS	Macroinvertebrates	
			REC	NS	PS	Fecal Coliform	Fecal Coliform
	Brushy Creek	BE-035	AL	PS	FS	Macroinvertebrates	
	Abner Creek	B-792	AL	PS	FS	Macroinvertebrates	
03050108-02	Enoree River	B-041	AL	NS	FS	Zinc	
		B-053/ RS-03495	REC	NS	PS	Fecal Coliform	Fecal Coliform
03050108-03	Duncan Creek Reservoir 6B	B-735	AL	PS	FS	pH	
	Beards Fork	B-231	AL	NS	PS	Dissolved Oxygen	Dissolved Oxygen
03050108-05	Enoree River	B-054	AL	NS	PS	Chromium	Copper
			REC	NS	PS	Fecal Coliform	Fecal Coliform
03050107-01	Middle Tyger River	B-014	REC	NS	PS	Fecal Coliform	Fecal Coliform
03050107-02	North Tyger River	B-219	REC	NS	FS	Fecal Coliform	
	Lake Cooley	B-348	AL	PS	FS	pH	
03050107-03	South Tyger River	B-005	REC	NS	PS	Fecal Coliform	Fecal Coliform
	Lake Robinson	CL-100	AL	PS	FS	pH	
03050107-04	Fairforest Creek	B-021	AL	NS	PS	Macroinvertebrates Chromium, Copper, Zinc	Macroinvertebrates
		BF-008	REC	NS	PS	Fecal Coliform	Fecal Coliform
03050107-05	Tyger River	B-008	REC	NS	PS	Fecal Coliform	Fecal Coliform
		B-051	REC	NS	FS	Fecal Coliform	
03050105-08	Buffalo Creek	B-119	REC	NS	PS	Fecal Coliform	Fecal Coliform
		B-057	REC	NS	PS	Fecal Coliform	Fecal Coliform
03050105-10	Thicketty Creek	B-095	REC	NS	PS	Fecal Coliform	Fecal Coliform
		B-062	REC	NS	PS	Fecal Coliform	Fecal Coliform
	Gilkey Creek	B-334	REC	NS	FS	Fecal Coliform	

Broad River Basin Sites that Improved from 2000 to 2004

REC= Recreational; AL=Aquatic Life; FS=Fully Supported Standards; PS=Partially Supported Standards; NS=Nonsupported Standards

Watershed	Waterbody Name	Station #	Use	Status		Water Quality Indicator	
				2000	2004	2000	2004
03050105-12	North Pacolet River	B-126	REC	NS	PS	Fecal Coliform	Fecal Coliform
	Lake Lanier	B-099B	REC	PS	FS	Fecal Coliform	
03050105-13	South Pacolet River	B-302	REC	NS	PS	Fecal Coliform	Fecal Coliform
03050105-14	Lawsons Fork Creek	B-221	AL	PS	FS	Macroinvertebrates	
		BL-005	REC	NS	PS	Fecal Coliform	Fecal Coliform
03050105-15	Pacolet River	B-028	REC	NS	PS	Fecal Coliform	Fecal Coliform
		B-331	REC	PS	FS	Fecal Coliform	
		BP-001	REC	NS	PS	Fecal Coliform	Fecal Coliform
		B-048	REC	NS	PS	Fecal Coliform	Fecal Coliform
	Potter Branch	B-191	REC	NS	PS	Fecal Coliform	Fecal Coliform
03050105-16	Broad River	B-042	REC	NS	PS	Fecal Coliform	Fecal Coliform
		B-044	REC	NS	PS	Fecal Coliform	Fecal Coliform
	Canoe Creek	B-088	AL	PS	FS	Dissolved Oxygen	
	Furnace Creek	B-100	REC	NS	PS	Fecal Coliform	Fecal Coliform
	Doolittle Creek	B-323	REC	NS	PS	Fecal Coliform	Fecal Coliform
	Guyonmoore Creek	B-330	REC	PS	FS	Fecal Coliform	
	Cherokee Creek	B-056	REC	NS	FS	Fecal Coliform	
03050106-03	Lake John D. Long	B-344	AL	NS	FS	pH	
	Gregorys Creek	B-335	REC	NS	FS	Fecal Coliform	
03050106-04	Broad River	B-047	REC	PS	FS	Fecal Coliform	
03050106-07	Broad River Diversion Canal	B-080	AL	NS	FS	Copper	
	Wateree Creek	B-801	AL	PS	FS	Macroinvertebrates	
	Crane Creek	B-316	AL	NS	PS	Zinc	Macroinvertebrates
	Smith Branch	B-280	AL	NS	FS	Macroinvertebrates Zinc	

Table 4. Changes in Use Support Status

Broad River Basin Sites that Degraded from 2000 to 2004

REC= Recreational; AL=Aquatic Life; FS=Fully Supported Standards; PS=Partially Supported Standards; NS=Nonsupported Standards

Watershed	Waterbody Name	Station #	Use	Status		Water Quality Indicator	
				2000	2004	2000	2004
03050108-01	Enoree River	B-040	REC	PS	NS	Fecal Coliform	Fecal Coliform
	Beaverdam Creek	BE-039	AL	FS	PS		pH
	Durbin Creek	B-097	AL	FS	PS		pH
03050108-02	Enoree River	B-053/ RS-03495	AL	FS	NS		Copper
	Beaverdam Creek	B-246	AL	FS	NS		Macroinvertebrates Copper
03050108-03	Beards Fork Creek	B-231	REC	FS	NS		Fecal Coliform
03050108-05	Kings Creek	B-799	AL	FS	PS		Macroinvertebrates
03050107-01	Middle Tyger River	B-014	AL	FS	NS		Copper
03050107-02	North Tyger River	B-018A	AL	FS	NS		Copper
03050107-03	South Tyger River	B-005	AL	FS	NS		Copper
03050107-04	Lake Johnson	CL-035	AL	PS	NS	pH	Dissolved Oxygen, Total Phosphorus, pH, Chlorophyll-a
	Mitchell Creek	B-781	AL	FS	PS		Macroinvertebrates
03050107-05	Jimmies Creek	B-786	AL	FS	PS		Macroinvertebrates
	Cane Creek	B-777	AL	FS	PS		Macroinvertebrates
	Tinkers Creek	B-287	AL	FS	NS		pH, Turbidity
03050105-10	Thicketty Creek	B-062	AL	FS	NS		Copper
	Gilkey Creek	B-334	AL	FS	PS		Macroinvertebrates
03050105-11	Long Branch	B-326	REC	FS	PS		Fecal Coliform
	Clark Fork	B-325	AL	FS	PS		Dissolved Oxygen
			REC	FS	NS		Fecal Coliform
03050105-14	Meadow Creek	B-531	AL	FS	PS		Macroinvertebrates
03050105-15	Potter Branch	B-191	AL	FS	PS		Dissolved Oxygen, pH
03050105-16	Broad River	B-042	AL	FS	NS		Copper
03050106-01	Turkey Creek	B-136	AL	FS	PS		Macroinvertebrates
			REC	PS	NS	Fecal Coliform	Fecal Coliform

Broad River Basin Sites that Degraded from 2000 to 2004

REC= Recreational; AL=Aquatic Life; FS=Fully Supported Standards; PS=Partially Supported Standards; NS=Nonsupported Standards

Watershed	Waterbody Name	Station #	Use	Status		Water Quality Indicator	
				2000	2004	2000	2004
03050106-01 (Continued)	Ross Branch	B-086	AL	FS	NS		Turbidity
03050106-02	Dry Fork	B-074	AL	FS	PS		Dissolved Oxygen
03050106-03	Browns Creek	B-155	AL	FS	PS		Macroinvertebrates
	Broad River	B-046	AL	FS	PS		Copper
	Meng Creek Tributary	B-243	AL	FS	PS		pH
	Meng Creek	B-064	AL	FS	PS		pH
03050106-04	Monticello Reservoir	B-327	AL	FS	PS		pH
	Parr Reservoir	B-346	AL	FS	NS		Total Phosphorus
		B-345	AL	FS	NS		Copper
03050106-05	Jackson Creek	B-102	AL	PS	NS	Macroinvertebrates	Macroinvertebrates Copper
03050106-06	Big Cedar Creek	B-320/ RS-03517	REC	PS	NS	Fecal Coliform	Fecal Coliform
03050106-07	Broad River	B-236	AL	FS	NS		Copper

Introduction

The South Carolina Department of Health and Environmental Control (SCDHEC or the Department) initiated its first watershed planning activities as a result of a U.S. Environmental Protection Agency (USEPA) grant in June of 1972. These activities were soon extended by requirements for a Continuing Planning Process under §303(e), "Federal Water Pollution Control Act Amendments of 1972", U.S. Public Law 92-500. In 1975, the SCDHEC published basin-planning reports for the four major basins in South Carolina. A related planning activity resulted from §208 of the Federal Water Pollution Control Act, which required states to prepare planning documents on an areawide basis. Areawide plans were completed in the late 1970's for the five designated areas of the State and for the nondesignated remainder of the State. The updated versions serve as information sources and guides for water quality management. The Continuing Planning Process, watershed assessments, and 208 plans are elements of South Carolina's overall water quality management plan.

The Bureau of Water emphasizes watershed planning to better coordinate river basin planning and water quality management. Watershed-based management allows the Department to address Congressional and Legislative mandates in a coordinated manner and to better utilize current resources. The watershed approach also improves communication between the Department, the regulated community, and the public on existing and future water quality issues.

Purpose of the Watershed Water Quality Assessment

A watershed is a geographic area into which the surrounding waters, sediments, and dissolved materials drain, and whose boundaries extend along surrounding topographic ridges. Watershed-based water quality management recognizes the interdependence of water quality related activities associated with a drainage basin including: monitoring, problem identification and prioritization, water quality modeling, planning, permitting, and other activities. The Bureau of Water's watershed approach integrates these and other activities by watershed, resulting in appropriately focused water quality protection efforts. While an important aspect of the program is water quality problem identification and solution, the emphasis is on problem prevention.

The Department has divided the State into five regions (areas consisting of one or more river basins), along hydrologic lines, which contain approximately the same number of NPDES permitted dischargers. A Watershed Water Quality Assessment (WWQA) will be created for each major river basin within the five regions and will be updated on a five-year rotational basis. This will allow for effective allocation and coordination of water quality activities and efficient use of available resources. The Department's Broad River Basin is subdivided into 27 watersheds or hydrologic units within South Carolina, which include the Enoree River Basin, the Tyger River Basin, and the Broad River Basin. The Enoree River Basin is subdivided into 5 watersheds and includes Duncan Creek and Indian Creek. The Tyger River Basin is subdivided into 5 watersheds and includes the Middle Tyger River, the North Tyger River, the South Tyger River, and Fairforest Creek. Both the Enoree and Tyger Rivers drain into the Broad River. The Broad River Basin is subdivided into 17 watersheds and includes Thicketty Creek, the North Pacolet River, the South Pacolet River, the Pacolet River, Lawsons Fork Creek, the Sandy River, the Little River, and Cedar Creek.

The hydrologic units used are from the 2005 USDA NRCS 8-, 10-, 12-Digit Hydrologic Unit Code for South Carolina. All water quality related evaluations are made at the 10-digit watershed level. The stream names used are derived from USGS topographic maps. The National Hydrography Dataset (NHD) was the system used in the development of the digital hydrography and stream length estimates. NHD is based on the content of the USGS 1:100,000 scale Digital Line Graph (DLG) hydrography data, integrated with reach (stream) related information from the USEPA Reach File Version 3.0 (RF3) data. Based on the blue line streams of the USGS topo maps, it is likely that portions of the stream network in terms of perennial, intermittent, and ephemeral streams are not represented.

The watershed-based assessments fulfill a number of USEPA reporting requirements including various activities under §303(d), §305(b), §314, and §319 of the Clean Water Act (CWA). Section 303(d) requires a listing of waters located within a watershed that do not meet applicable water quality standards. Section 305(b) requires that the State biennially submit a report that includes a water quality description and analysis of all navigable waters to estimate environmental impacts. Section 314 requires that the State submit a biennial report that identifies, classifies, describes, and assesses the status and trends in water quality of publicly owned lakes. The watershed plan is also a logical evaluation, prioritization, and implementation tool for nonpoint source (§319) requirements. Nonpoint source best management practices (BMPs) can be selected by identifying water quality impairments and necessary controls, while considering all the activities occurring in the drainage basin.

The assessment also allows for more efficient issuance of National Pollutant Discharge Elimination System (NPDES) and State wastewater discharge permits. Proposed permit issuances within a watershed may be consolidated and presented to the public in groups, rather than one at a time, allowing the Department to realize a resource savings and the public to realize an information advantage.

The Watershed Water Quality Assessment (WWQA) is a geographically based document that describes, at the watershed level, water quality related activities that may potentially have an adverse impact on water quality. The Watershed Implementation Staff investigates the impaired streams mentioned in the WWQA to determine, where possible, the source of the impairment and recommends solutions to correct the problems. As part of this effort, the watershed staff is forging partnerships with various federal and state agencies, local governments, and community groups. In particular, the Department's Watershed Program and the NRCS (Natural Resources Conservation Service) district offices are working together to address some of the nonpoint source (NPS) concerns in the basin. By combining NRCS's local knowledge of land use and the Department's knowledge of water quality, we are able to build upon NRCS's close relationships with landowners and determine where NPS projects are needed. These projects may include educational campaigns or special water quality studies.

Factors Assessed in Watershed Evaluations

Surface Water Quality

SCDHEC's Bureau of Water and Bureau of Environmental Services ensure that the water in South Carolina is safe for drinking and recreation, and that it is suitable to support and maintain aquatic flora and fauna. Functions include planning, permitting, compliance assurance, enforcement, and monitoring. This section provides an overview of water quality evaluation and protection activities.

Monitoring

In an effort to evaluate the State's water quality, the Department operates and collects data from a statewide network of ambient monitoring sites. The ambient monitoring network is directed toward determining long-term water quality trends, assessing attainment of water quality standards, identifying locations in need of additional attention, and providing background data for planning and evaluating stream classifications and standards.

Ambient monitoring data are also used in the process of formulating permit limits for wastewater discharges with the goal of maintaining State and Federal water quality standards and criteria in the receiving streams in accordance with the goals of the Clean Water Act. These standards and criteria define the instream chemical concentrations that provide for protection and reproduction of aquatic flora and fauna, help determine support of the classified uses of each waterbody, and serve as instream limits for the regulation of wastewater discharges or other activities. In addition, by comparing the ambient monitoring network data to the State Water Quality Standards, these data are used in the preparation of the biennial §305(b) report to Congress, which provides a general summary of statewide water quality, and the §303(d) list of impaired waters with respect to attainment of classified uses.

Extensive revisions to SCDHEC's ambient water quality monitoring network were implemented in 2001. One of the primary purposes of the changes was to establish a network of permanent sites with a greater focus on watersheds. Another goal was to establish a more consistent sampling frequency and parameter coverage at the permanent sites. Thus while most of the previous sampling locations were maintained, the sampling frequency and parameter coverage at each may have changed. The previous monitoring design was comprised of four main station types: primary (P), secondary (S), watershed (W), and biological (BIO) stations. The new station types include: Integrator (INT), Special Purpose (SPRP), Summer-Only (SUMM), Sediment-Only (SEDM), Random Stream for year ## (RS##), Random Lake for year ## (RL##), Random Tide Creek for year ## (RT##), or Random Open Water for year ## (RO##). The station descriptions depicting any transition in station types and/or coverage during the study period are located in each watershed evaluation.

Primary stations are sampled on a monthly basis year round. The static primary station network is operated statewide, and receives the most extensive parameter coverage, thus making it

best suited for detecting long-term trends. Integrator Sites are the approximate equivalent under the new design. Integrator Sites target the furthest downstream access of each of the 11-digit watershed units in the state, as well as the major waterbodies that occur within these watershed units. Special Purpose Sites are also permanent, fixed-location sites, but represent locations of special interest to the Department that do not meet the location criteria of Integrator Sites.

Secondary stations are sampled monthly from May through October, a period critical to aquatic life, and characterized by higher water temperatures and lower flows. Secondary stations are located in areas where specific monitoring is warranted due to point source discharges, or in areas with a history of water quality problems. Secondary station parameter coverage is less extensive and more flexible than primary or watershed station coverages. The number and locations of secondary stations have greater annual variability than do those in the primary station network, and during a basin's target year may have parameter coverage and sampling frequency duplicating that of primary or watershed stations. Summer-Only Sites are the equivalent under the new design. There are very few Summer-Only Sites as they are intended to track specific reservoir eutrophication concerns.

Watershed stations are sampled on a monthly basis, year round, during a basin's target year. Additional watershed stations may be sampled monthly from May through October to augment the secondary station network. Watershed stations are located to provide more complete and representative coverage within the larger drainage basin, and to identify additional monitoring needs. Watershed stations have the same parameter coverage as primary stations. Under the new design, Watershed stations are locations with extensive historic monitoring data (e.g. primary or secondary monitoring sites under the previous design). Changes in water quality can be identified by comparison of the new data to the historic data.

A statewide Probability-Based, or random sampling, component is part of the new monitoring design. A probability-based monitoring design is a type of a survey design in which the population of interest is sampled in a fashion that allows statements to be made about the whole population based on a subsample, and produces an estimate of the accuracy of the assessment results. The advantage of the probability-based sampling design is that statistically valid statements about water quality can be made about large areas based on a relatively small subsample. Separate monitoring schemes have been developed for stream, lake/reservoir, and estuarine resources. Each year a new statewide set of probability-based random sites is selected for each waterbody type. Random Sites are sampled on a monthly basis for one year with the same parameter coverage as Integrator Sites. The data from those Random Sites located within this basin are included in this assessment.

Ambient biological trend monitoring is conducted to collect data to indicate general biological conditions of State waters that may be subject to a variety of point and nonpoint source impacts. Ambient biological sampling is also used to establish regional reference or "least impacted" sites from which to make comparisons in future monitoring. Additionally, special macroinvertebrate studies, in which stream specific comparisons among stations located upstream and downstream from a known discharge or nonpoint source area, are used to assess impact.

Qualitative sampling of macroinvertebrate communities is the primary bioassessment technique used in ambient biological trend monitoring. A habitat assessment of general stream habitat availability and a substrate characterization is conducted at each site. Annual ambient biological monitoring is conducted during low flow "worst case" conditions in July - September. Some coastal plain streams that have no flow conditions in the summer months may be sampled in the winter (January-March). This technique may also be used in special studies for the purpose of determining if, and to what extent, a wastewater discharge or nonpoint source runoff is impacting the receiving stream. A minimum of two sample locations, one upstream and one downstream from a discharge or runoff area, is collected. At least one downstream recovery station is also established when appropriate. Sampling methodology follows procedures described in Standard Operating Procedures, Biological Monitoring. Only sites described as 'BIO' will collect information on the macroinvertebrate communities used in the ambient biological trend monitoring.

Many pollutants may be components of point source discharges, but may be discharged in a discontinuous manner, or at such low concentrations that water column sampling for them is impractical. Some pollutants are also common in nonpoint source runoff, reaching waterways only after a heavy rainfall; therefore, in these situations, the best media for the detection of these chemicals are sediment and fish tissue where they may accumulate over time. Their impact may also affect the macroinvertebrate community.

Aquatic sediments represent a historical record of chronic conditions existing in the water column, and sediment samples are analyzed at selected monitoring sites. Pollutants bind to particulate organic matter in the water column and settle to the bottom where they become part of the sediment "record". Accumulated sediments not only reflect the impact of point source discharges, but also incorporate nonpoint source pollution washed into the stream during rain events. As a result, contaminant concentrations originating from irregular and highly variable sources are recorded in the sediment. The sediment concentrations at a particular location do not vary as rapidly with time as do the water column concentrations. Thus, the sediment record may be read at a later time, unrelated to the actual release time. Lakes act as settling basins for materials entering the lake system directly from a discharge or indirectly from the land surface washed into streams. Therefore, it is not unusual for lake sediment concentrations to be higher than sediment concentrations found in streams.

The ambient monitoring program has the capability of sampling a wide range of media and analyzing them for the presence or effects of contaminants. Ambient monitoring data from 208 stations were reviewed for the Broad River Basin, 37 from the Enoree River Basin, 50 from the Tyger River Basin, and 121 for the Broad River Basin.

Natural Swimming Areas

Although all waters of the State are protected for swimming, some areas are more popular than others and may require closer monitoring. Currently monitored areas are located and discussed in the appropriate watershed evaluations.

Classified Waters, Standards, and Natural Conditions

The waters of the State have been classified in regulation based on the desired uses of each waterbody. State standards for various parameters have been established to protect all uses within each classification. The water-use classifications that apply to this basin are as follows.

Class ORW, or "outstanding resource waters", are freshwaters or saltwaters that constitute an outstanding recreational or ecological resource, or those freshwaters suitable as a source for drinking water supply purposes, with treatment levels specified by the Department.

Class A were freshwaters that were suitable for primary contact recreation. This class was also suitable for uses listed as Class B. As of April 1992, Class A and Class B waters were reclassified as Class FW, which protects for primary contact recreation.

Class B were freshwaters that were suitable for secondary contact recreation and as a source for drinking water supply, after conventional treatment, in accordance with the requirements of the Department. These waters were suitable for fishing, and the survival and propagation of a balanced indigenous aquatic community of fauna and flora. This class was also suitable for industrial and agricultural uses. The main difference between the Class A and B freshwater was the fecal coliform standard. Class A waters were not to exceed a geometric mean of 200/100ml, based on 5 consecutive samples during any 30 day period; nor were more than 10% of the total samples during any 30 day period to exceed 400/100ml. Class B waters were not to exceed a geometric mean of 1000/100ml, based on 5 consecutive samples during any 30 day period; nor were more than 20% of the total samples during any 30 day period to exceed 2000/100ml. As of April 1992, Class A and Class B waters were reclassified as Class FW, which protects for primary contact recreation.

Class FW, or "freshwaters", are freshwaters that are suitable for primary and secondary contact recreation and as a source for drinking water supply, after conventional treatment, in accordance with the requirements of the Department. These waters are suitable for fishing, and the survival and propagation of a balanced indigenous aquatic community of fauna and flora. This class is also suitable for industrial and agricultural uses.

Class GB, or "groundwaters", include all groundwaters of the State, unless classified otherwise, which meet the definition of underground sources of drinking water.

Site specific numeric standards (*) for surface waters may be established by the Department to replace the numeric standards found in Regulation 61-68 or to add new standards not contained in R.61-68. Establishment of such standards shall be subject to public participation and administrative procedures for adopting regulations. In addition, such site specific numeric standards shall not apply to tributary or downstream waters unless specifically described in the water classification listing in R.61-69.

The standards are used as instream water quality goals to maintain and improve water quality and also serve as the foundation of the Bureau of Water's program. They are used to determine permit limits for treated wastewater dischargers and any other activities that may impact water quality. Using mathematical Wasteload Allocation Models, the impact of a wastewater discharge on a receiving stream is predicted under critical conditions following R.61-68. These predictions are then used to set limits for different pollutants on the National Pollutant Discharge Elimination System (NPDES) permits issued by the Department. The NPDES permit limits are set so that, as long as a permittee (wastewater discharger) meets the established permit limits, the discharge should not cause a standards violation in the receiving stream. All discharges to the waters of the State are required to have an NPDES permit and must abide by those limits, under penalty of law.

Classifications are based on desired uses, not on natural or existing water quality, and are a legal means to obtain the necessary treatment of discharged wastewater to protect designated uses. Actual water quality may not have a bearing on a waterbody's classification. A waterbody may be reclassified if desired or existing public uses justify the reclassification and the water quality necessary to protect these uses is attainable. A classification change is an amendment to a State regulation and requires public participation, SCDHEC Board approval, and General Assembly approval.

Natural conditions may prevent a waterbody from meeting the water quality goals as set forth in the standards. The fact that a waterbody does not meet the specified numeric standards for a particular classification does not mean the waterbody is polluted or of poor quality. Certain types of waterbodies (i.e. swamps, lakes, tidal creeks) may naturally have water quality lower than the numeric standards. A waterbody can have water quality conditions below standards due to natural causes and still meet its use classification. A site specific numeric standard may be established by the Department after being subjected to public participation and administrative procedures for adopting regulations. Site specific numeric standards apply only to the stream segment described in the water classification listing, not to tributaries or downstream unspecified waters.

Water Quality Indicators

Water quality data are used to describe the condition of a waterbody, to help understand why that condition exists, and to provide some clues as to how it may be improved. Water quality indicators include physical, chemical, and biological measurements. Copies of the Standard Operating Procedures used for these measurements are available from the Department's Bureau of Water and the Bureau of Environmental Services. The current State of S.C. Monitoring Strategy is available on our website at www.scdhec.gov/eqc/admin/html/eqcpubs.html#wqreports and describes what parameters are sampled, where they are sampled, and how frequently.

MACROINVERTEBRATE COMMUNITY

Macroinvertebrates are aquatic insects and other aquatic invertebrates associated with the substrates of waterbodies (including, but not limited to, streams, rivers, tidal creeks, and estuaries). Macroinvertebrates can be useful indicators of water quality because these communities respond to integrated stresses over time that reflect fluctuating environmental conditions. Community responses to various pollutants (e.g. organic, toxic, and sediment) may be assessed through interpretation of diversity, known organism tolerances, and in some cases, relative abundances and feeding types.

FISH TISSUE

Many pollutants occur in such low concentrations in the water column that they are usually below analytical detection limits. Over time many of these chemicals may accumulate in fish tissue to levels that are easily measured. By analyzing fish tissue it is possible to see what pollutants may

be present in waterbodies at very low levels. This information can also be used to determine if consumption of the fish poses any undue human health concerns and to calculate consumption rates that are safe.

DISSOLVED OXYGEN

Oxygen is essential for the survival and propagation of aquatic organisms. If the amount of oxygen dissolved in water falls below the minimum requirements for survival, aquatic organisms or their eggs and larvae may die. A severe example is a fish kill. Dissolved oxygen (DO) varies greatly due to natural phenomena, resulting in daily and seasonal cycles. Different forms of pollution also can cause declines in DO.

Changes in DO levels can result from temperature changes or the activity of plants and other organisms present in a waterbody. The natural diurnal (daily) cycle of DO concentration is well documented. Dissolved oxygen concentrations are generally lowest in the morning, climbing throughout the day due to photosynthesis and peaking near dusk, then steadily declining during the hours of darkness.

There is also a seasonal DO cycle in which concentrations are greater in the colder, winter months and lower in the warmer, summer months. Streamflow (in freshwater) is generally lower during the summer and fall, and greatly affects flushing, reaeration, and the extent of saltwater intrusion, all of which affect dissolved oxygen values.

BIOCHEMICAL OXYGEN DEMAND

Five-day biochemical oxygen demand (BOD_5) is a measure of the amount of dissolved oxygen consumed by the decomposition of carbonaceous and nitrogenous matter in water over a five-day period. The BOD_5 test indicates the amount of biologically oxidizable carbon and nitrogen that is present in wastewater or in natural water. Matter containing carbon or nitrogen uses dissolved oxygen from the water as it decomposes, which can result in a dissolved oxygen decline. The quantity of BOD_5 discharged by point sources is limited through the National Pollutant Discharge Elimination System (NPDES) permits issued by the Department. The discharge of BOD_5 from a point source is restricted by the permits so as to maintain the applicable dissolved oxygen standard.

PH

pH is a measure of the hydrogen ion concentration of water, and is used to indicate degree of acidity. The pH scale ranges from 0 to 14 standard units (SU). A pH of 7 is considered neutral, with values less than 7 being acidic, and values greater than 7 being basic.

Low pH values are found in natural waters rich in dissolved organic matter, especially in Coastal Plain swamps and black water rivers. The tannic acid released from the decomposition of vegetation causes the tea coloration of the water and low pH. High pH values in lakes during warmer months are associated with high phytoplankton (algae) densities. The relationship between phytoplankton and daily pH cycles is well established. Photosynthesis by phytoplankton consumes

carbon dioxide during the day, which results in a rise in pH. In the dark, phytoplankton respiration releases carbon dioxide. In productive lakes, carbon dioxide decreases to very low levels, causing the pH to rise to 9-10 SU.

FECAL COLIFORM BACTERIA

Fecal coliform bacteria are present in the digestive tract and feces of all warm-blooded animals, including humans, poultry, livestock, and wild animal species. Fecal coliform bacteria are themselves generally not harmful, but their presence indicates that surface waters may contain pathogenic microbes. Diseases that can be transmitted to humans through water contaminated by improperly treated human or animal waste are the primary concern. At present, it is difficult to distinguish between waters contaminated by animal waste and those contaminated by human waste.

Public health studies have established correlations between fecal coliform numbers in recreational and drinking waters and the risk of adverse health effects. Based on these relationships, the USEPA and SCDHEC have developed enforceable standards for surface waters to protect against adverse health effects from various recreational or drinking water uses. Proper waste disposal or sewage treatment prior to discharge to surface waters minimizes this type of pollution.

NUTRIENTS

Oxygen demanding materials and plant nutrients are common substances discharged to the environment by man's activities, through wastewater facilities and by agricultural, residential, and stormwater runoff. The most important plant nutrients, in terms of water quality, are phosphorus and nitrogen. In general, increasing nutrient concentrations are undesirable due to the potential for accelerated growth of aquatic plants, including algae.

The forms of nitrogen routinely analyzed at SCDHEC stations are ammonia and ammonium nitrogen (NH_3/NH_4), total Kjeldahl nitrogen (TKN), and nitrite and nitrate nitrogen (NO_2/NO_3). Ammonia and ammonium are readily used by plants. TKN is a measure of organic nitrogen and ammonia in a sample. Nitrate is the product of aerobic transformation of ammonia, and is the most common form used by aquatic plants. Nitrite is usually not present in significant amounts. Total nitrogen is the sum of TKN and NO_2/NO_3.

Total phosphorus (TP) is commonly measured to determine phosphorus concentrations in surface waters. TP includes all of the various forms of phosphorus (organic, inorganic, dissolved, and particulate) present in a sample.

CHLOROPHYLL *a*

Nuisance plant growth can create imbalances in the aquatic community, as well as aesthetic and access issues. Invasive growth of rooted aquatic vegetation can clog boat motors and create disagreeable conditions for swimming and water skiing. High densities of microscopic algae (phytoplankton) can cause wide fluctuations in pH and dissolved oxygen, and can cause undesirable shifts in the composition of aquatic life, or even fish kills. Chlorophyll *a* is a dominant photosynthetic

pigment in plants and is used as an indicator of the density of phytoplankton in the water column. The process of cultural eutrophication, from increased plant nutrients, is particularly noticeable in lakes. Continuous flushing in streams prevents the development of significant phytoplankton populations and the resultant chemical changes in water quality.

TURBIDITY

Turbidity is an expression of the scattering and absorption of light through water. The presence of clay, silt, fine organic and inorganic matter, soluble colored organic compounds, and plankton and other microscopic organisms increases turbidity. Increasing turbidity can be an indication of increased runoff from land. It is an important consideration for drinking water as finished water has turbidity limits.

TOTAL SUSPENDED SOLIDS

Total Suspended Solids (TSS) are the suspended organic and inorganic particulate matter in water. Although increasing TSS can also be an indication of increased runoff from land, TSS differs from turbidity in that it is a measure of the mass of material in, rather than light transmittance through, a water sample. High TSS can adversely impact fish and fish food populations and damage invertebrate populations. There are no explicit State standards for TSS.

HEAVY METALS

Concentrations of cadmium, chromium, copper, lead, mercury, and nickel in water are routinely measured by the Department to compare to State standards intended to protect aquatic life and human health. These metals occur naturally in the environment, and many are essential trace elements for plants and animals. Human activities, such as land use changes and industrial and agricultural processes have resulted in an increased flux of metals from land to water. Atmospheric inputs are also recognized as important sources of metals to aquatic systems. Metals are released to the atmosphere from the burning of fossil fuels (coal, oil, gasoline), wastes (medical, industrial, municipal), and organic materials. The metals are then deposited on land and in waterways from the atmosphere via rainfall and attached to particulates (dry deposition).

Assessment Methodology

The Watershed Water Quality Assessment is a geographically-based document that describes, at the watershed level, water quality as well as conditions and activities related to water quality. Significant revisions to South Carolina's Water Quality Standards were effective on June 22, 2001. USEPA approved these standards for use in implementing the Clean Water Act on November 28, 2001. This section provides an explanation of the information assessment methodology used to generate the watershed-level summaries. Water quality data summaries used in this assessment are presented in Appendices A through C.

USE SUPPORT DETERMINATION

Physical, chemical and biological data were evaluated, as described below, to determine if water quality met the water quality criteria established to protect the State classified uses defined in S.C. Regulation 61-68, *Water Classifications and Standards*. Some waters may exhibit characteristics outside the appropriate criteria due to natural conditions. Such natural conditions do not constitute a violation of the water quality criteria. To determine the appropriate classified uses and water quality criteria for specific waterbodies and locations, refer to S.C. Regulation 61-69, *Classified Waters*, in conjunction with S.C. Regulation 61-68.

At the majority of SCDHEC's surface water monitoring stations, samples for analysis are collected as surface grabs once per month, quarter, or year, depending on the parameter. Grab samples collected at a depth of 0.3 meters are considered to be a surface measurement. At most stations sampled by boat, dissolved oxygen and temperature are sampled as a water column profile, with measurements being made at a depth of 0.3 meters below the water surface and at one-meter intervals to the bottom or at 0.3 meters, mid-depth, and bottom. At stations sampled from bridges, these parameters are measured only at a depth of 0.3 meters. For the purpose of assessment, only surface samples are used in standards comparisons and trend assessments. Because of the inability to target individual high or low flow events on a statewide basis these data are considered to represent typical physical conditions and chemical concentrations in the waterbodies sampled. All water and sediment samples are collected and analyzed according to standard procedures (SCDHEC 1997, 2001).

Results from water quality samples can be compared to State and USEPA criteria, with some restrictions due to time of collection and sampling frequency. For certain parameters, the monthly sampling frequency employed in the ambient monitoring network is insufficient for strict interpretation of the standards. The USEPA does not define the sampling method or frequency other than indicating that it should be "representative". The grab sample method is considered to be representative for the purpose of indicating excursions relative to criteria, within certain considerations. A single grab sample is more representative of a one-hour average than a four-day average, more representative of a one-day average than a one-month average, and so on; thus, when inferences are drawn from grab samples relative to criteria, sampling frequency and the intent of the criteria must be weighed. When the sampling method or frequency does not agree with the intent of the particular criterion, any conclusion about water quality should be considered as only an indication of conditions, not as a proven circumstance.

Macroinvertebrate community structure is analyzed routinely, at selected stations, as a means of detecting adverse biological impacts on the aquatic fauna of the state's waters due to water quality conditions that may not be readily detectable in the water column chemistry.

This water quality assessment is based on the last complete five years of available quality assured physical, chemical, and biological data (2000 - 2004).

AQUATIC LIFE USE SUPPORT

One important goal of the Clean Water Act, the South Carolina Pollution Control Act, and the State Water Quality Classifications and Standards is to maintain the quality of surface waters to provide for the survival and propagation of a balanced indigenous aquatic community of fauna and flora. The degree to which aquatic life is protected (Aquatic Life Use Support) is assessed by comparing important water quality characteristics and the concentrations of potentially toxic pollutants with numeric criteria.

Support of aquatic life uses is determined based on the percentage of numeric criteria excursions and, where data are available, the composition and functional integrity of the biological community. The term excursion is used to describe a measured pollutant concentration that is outside of the acceptable range as defined by the appropriate criterion. Some waters may exhibit characteristics outside the appropriate criteria due to natural conditions. Such natural conditions do not constitute a violation of the water quality criteria. A number of waterbodies have been given waterbody-specific criteria for pH and dissolved oxygen, which reflect natural conditions. To determine the appropriate numeric criteria and classified uses for specific waterbodies and locations, please refer to S.C. Regulation 61-68, *Water Classifications and Standards* and S.C. Regulation 61-69, *Classified Waters*.

If the appropriate criterion for **dissolved oxygen and pH** are contravened in 10 percent or less of the samples, the criterion is said to be fully supported. If the percentage of criterion excursions is greater than 10 percent, but less than or equal to 25 percent, the criterion is partially supported, unless excursions are due to natural conditions. If there are more than 25 percent excursions, the criterion is not supported, unless excursions are due to natural conditions. The decision that criteria excursions are due to natural conditions is determined by consensus and/or the professional judgment of SCDHEC staff with specific local knowledge.

If the appropriate acute or chronic aquatic life criterion for any individual **toxicant** (**heavy metals, priority pollutants, ammonia**) is exceeded more than once, representing more than 10 percent of the samples collected, the criterion is not supported. If the acute or chronic aquatic life criterion is exceeded more than once, but in less than or equal to 10 percent of the samples, the criterion is partially supported.

The total recoverable metals criteria for **heavy metals** are adjusted to account for solids partitioning following the approach set forth in the Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria, October 1, 1993, by Martha G. Prothro, Acting Assistant Administrator for Water, available from the Water Resource center, USEPA, 401 M St., SW, mail code RC4100, Washington, DC 20460; and 40CFR131.36(b)(1). Under this approach, a default TSS value of 1 mg/L is used. Where the metals criteria are hardness based, a default value of 25 mg/L is used for waters where hardness is 25 mg/l or less.

The calculation of the appropriate criterion value for **ammonia** requires the values of several associated field parameters measured concurrent with the ammonia sample collection. Where direct

measurements of any of the parameters are lacking the ammonia value will not be used to determine compliance with the standards.

If the appropriate criterion for **turbidity** in all waters, and for waters with **numeric total phosphorus, total nitrogen, and chlorophyll-a** criteria is exceeded in more than 25 percent of the samples, the criterion is not supported. If the criterion is exceeded in more than 10 but less than 25 percent, sites are evaluated on a case-by-case basis to determine if local conditions indicate that classified uses are impaired. Among the characteristics considered are: hydrology and morphometry of the waterbody, existing and projected trophic state, characteristics of pollutant loadings and ongoing pollutant control mechanisms. If the criterion is exceeded in less than 10 percent of the samples, then the criterion is fully supported.

If the conclusion for any single parameter is that the criterion is "not supported", then it is concluded that aquatic life uses are not supported for that waterbody, at that monitoring location. If there are no criteria that are "not supported", but the conclusion for at least one parameter criterion is "partially supported", then the conclusion is aquatic life uses are partially supported. Regardless of the number of samples, no monitoring site will be listed as partially or not supporting for any pollutant based a single sample result because of the possibility of an anomalous event.

The goal of the standards for aquatic life uses is the protection of a balanced indigenous aquatic community; therefore, biological data is the ultimate deciding factor, regardless of chemical conditions. If biological data shows a healthy, balanced community, the use is considered supported even if chemical parameters do not meet the applicable criteria.

MACROINVERTEBRATE DATA INTERPRETATION

Macroinvertebrate community assessment data are used to directly determine Aquatic Life Use Support and to support determinations based on water chemistry data. Macroinvertebrate community data may also be used to evaluate potential impacts from the presence of sediment contaminants. Aquatic and semi-aquatic macroinvertebrates are identified to the lowest practical taxonomic level depending on the condition and maturity of specimens collected. The EPT Index and the North Carolina Biotic Index are the main indices used in analyzing macroinvertebrate data. To a lesser extent, taxa richness and total abundance may be used to help interpret data.

The EPT Index or the Ephemeroptera (mayflies) - Plecoptera (stoneflies) - Trichoptera (caddisflies) Index is the total taxa richness of these three generally pollution-sensitive orders. EPT values are compared with least impacted regional sites. The Biotic Index for a sample is the average pollution tolerance of all organisms collected, based on assigned taxonomic tolerance values. A database is currently being developed to establish significant EPT index levels to be used in conjunction with the Biotic Index to address aquatic life use support.

Taxa richness is the number of distinct taxa collected and is the simplest measure of diversity. High taxa richness is generally associated with high water quality. Increasing levels of pollution progressively eliminate the more sensitive taxa, resulting in lower taxa richness. Total abundance is

the enumeration of all macroinvertebrates collected at a sampling location. When gross differences in abundance occur between stations, this metric may be considered as a potential indicator.

RECREATIONAL USE SUPPORT

Recreational use support is defined as the degree to which the swimmable goal of the Clean Water Act is attained and is based on the frequency of fecal coliform bacteria excursions. A fecal coliform excursion is defined as an occurrence of a bacteria concentration greater than 400/100 ml for all surface water classes. Comparisons to the bacteria geometric mean standard are not considered appropriate based on sampling frequency and the intent of the standard. If 10 percent or less of the samples are greater than 400/100 ml, then recreational uses are said to be fully supported. If the percentage of standards excursions is greater than 10 percent, but less than or equal to 25 percent, then recreational uses are said to be partially supported. If the percentage of excursions is greater than 25 percent, then it is considered to represent nonsupport of recreational uses.

FISH CONSUMPTION USE SUPPORT

The Department uses a risk-based approach to evaluate fish tissue data and to issue consumption advisories in affected waterbodies. This approach contrasts the average daily exposure dose to the reference dose (RfD). Using these relationships, fish tissue data are interpreted by determining the consumption rates that would not be likely to pose a health threat to adult males and nonpregnant adult females. Because an acceptable RfD for developmental neurotoxicity has not been developed, pregnant women, infants, and children are advised to avoid consumption of fish from any waterbody where a mercury advisory was issued.

Fish consumption use support is determined by the occurrence of advisories or bans on consumption for a waterbody. For the support of fish consumption uses, a fish consumption advisory indicates partial use support, a consumption ban indicates nonsupport of uses. At the time of publication, there are no fish consumption advisories in the Broad River Basin. Fish consumption advisories are updated annually in March. For background information and the most current advisories please visit the Bureau of Water homepage at http://www.scdhec.gov/water and click on "Advisories". For more information or a hard copy of the advisories, call SCDHEC's Division of Health Hazard Evaluation toll-free at (888) 849-7241.

DRINKING WATER USE SUPPORT

Nonattainment of drinking water use is indicated if the median concentration of the ambient surface water data for any pollutant exceeds the appropriate drinking water Maximum Contaminant Level (MCL), based on a minimum of three samples. Where MCLs do not exist, SCDHEC may use or develop other criteria such that pollutant concentrations or amounts do not interfere with drinking water
use, actual or intended, as determined by SCDHEC.

Additional Screening and Prioritization Tools

Evaluation of water quality data and other supplemental information facilitates watershed planning. Information from the following sources is used to develop watershed-based protection and prevention strategies.

LONG-TERM TREND ASSESSMENT

As part of the watershed water quality assessments, surface data from each station are analyzed for statistically significant long-term trends using the Seasonal Kendall Test Without Correction (SKWOC) for significant serial correlation, using procedures in the WQHYDRO computer package developed by Eric Aroner of WQHYDRO Consulting. Flows are not available for most stations, and the parametric concentrations are not flow-corrected. Seasonal Kendall's Tau Analysis is used to test for the presence of a statistically significant trend of a parameter, either increasing or decreasing, over a fifteen-year period. It indicates whether the concentration of a given parameter is exhibiting consistent change in one direction over the specified time period. A two sided test at p=0.1 is used to determine statistically significant trends, and the direction of trend. An estimate of the magnitude of any statistically significant trend is calculated.

A rigorous evaluation for trends in time-series data usually includes a test for autocorrelation. The data are not tested for autocorrelation prior to the trend analysis. It is felt that autocorrelation would not seriously compromise a general characterization of water quality trends based on such a long series of deseasonalized monthly samples.

One of the advantages of the seasonal Kendall test is that values reported as being below detection limits (DL) are valid data points in this nonparametric procedure, since they are all considered to be tied at the DL value. When the DL changed during the period of interest, all values are considered to be tied at the highest DL occurring during that period. Since it is possible to measure concentrations equal to the value of the DL, values less than DL are reduced by subtraction of a constant so that they remain tied with each other, but are less than the values equal to the DL. Since fecal coliform bacteria detection limits vary with sample dilution, there is no set DL; therefore, for values reported as less than some number, the value of the number is used.

For the purposes of this assessment, long-term trends in selected parameters were examined using data collected from 1990 through 2004. In 1992, a phosphate detergent ban was instituted in South Carolina; therefore, for total phosphorus, a second trend assessment is included for the available data from 1992 through 2004, and it is this second time period that is reported in the text.

SEDIMENT SCREENING

There are no sediment standards; therefore, in order to identify sediments with elevated metals concentrations, percentiles are constructed using five years of statewide sediment data. Only values greater than the detection limit were used for chromium, copper, nickel, lead, and zinc. Because so few concentrations of cadmium and mercury are measured above the detection limit, all samples were pooled for these metals. A sediment metal concentration is considered to be high if it is

in the top 10% of the pooled results, and very high if it is in the top 5%. Any analytical result above detection limits is flagged for pesticides, PCBs, and other priority pollutants. Sites with noted high metals concentrations or the occurrence of other contaminants above detection limits are prioritized for the collection of biological data, or additional monitoring and investigation, to verify the true situation.

For saltwater sediments, national studies have been conducted by the National Oceanic and Atmospheric Administration (NOAA) and the State of Florida that have developed Sediment Quality Guidelines (SQGs) for the United States and the southeastern region. These SQGs summarize all published toxicology and biomonitoring studies for a given contaminant and ranked them from lowest to highest concentration where an adverse effect was observed. The tenth percentile of the ranked data, from all published studies that reported an adverse effect, is termed the Effects Range Low (ERL) or Threshold Effects Level (TEL) and represents the threshold concentration for toxicity to occur. The median concentration where adverse effects in benthos are observed (the fiftieth percentile) is termed the Effects Range Median (ERM) or Probable Effects Levels (PEL). Measured sediment contaminant levels may be compared with ERLs/ERMs or TELs/PELs to predict potential probability for sediment bound contaminants to cause toxicity in benthic faunal communities. Saltwater sediment contaminant levels were compared with existing sediment quality guidelines by individual compound. Sites with sediments which had individual chemical contaminant concentrations which exceeded ERL/TEL and ERM/PEL guideline levels are identified to indicate that trace metal, pesticide, PAH or PCB concentrations exceeded levels potentially toxic to estuarine organisms.

Groundwater Quality

The state of South Carolina depends upon its groundwater resources to supply an estimated 40 percent of its residents. To monitor the ambient quality of this valuable resource, a network of existing public and private water supply wells has been established that provides groundwater quality data representing all of the State's major aquifers (see SCDHEC's Ambient Groundwater Quality Monitoring Network Report for listing of groundwater quality data). A great deal of monitoring is also being carried out at regulated sites with known or potential groundwater contamination (see SCDHEC's South Carolina Groundwater Contamination Inventory).

The ambient monitoring network has been designed to avoid wells in areas of known or potential contamination in order to analyze natural aquifer conditions. Information collected can then be used to identify variations in water chemistry among the major aquifers of South Carolina and give a general understanding of the groundwater conditions throughout the state at varying depths.

Wells sampled in the Broad River were located within the Piedmont physiographic province, and outside of the Atlantic Coastal Plain. All well samples met state standards for Class GB groundwater (see section on Classified Waters, Standards, and Natural Conditions). The ambient

monitoring well sites are indicated in the appropriate watershed evaluations and depicted on the watershed maps.

Piedmont Bedrock Aquifer

The Piedmont Bedrock Aquifer extends from the Fall Line to the Blue Ridge Mountains. The Piedmont bedrock consists of fractured crystalline rock overlain by a saprolitic regolith, and limited alluvial valley fill deposits. Most public and private wells are completed in the fractured crystalline bedrock. Yields from crystalline bedrock vary greatly among wells, depending primarily upon the existence of joints and fractures within the rock. The overlying saprolite is hydraulically connected with the underlying bedrock and provides the primary source of recharge water to the bedrock aquifer. Yields of 4 to 170 gallons per minute (gpm) from the 30 network wells in the Piedmont bedrock have been recorded. This broad range in yield is an indicator of the great variability in the occurrence, size and interconnection of joints and other fractures that exist in this aquifer. Chemical analysis of data from the entire network's saprolite/bedrock well pairs indicate a similarity in composition. Minor differences in the concentration of dissolved silica and metals such as calcium, iron, and sodium are generally the only exception. Most of the bedrock wells displayed higher concentrations of silica, while the saprolite wells displayed higher concentrations of iron.

NPDES Program

The Water Facilities Permitting Division is responsible for drafting and issuing National Pollutant Discharge Elimination System (NPDES) permits. Facilities are defined as either "major" or "minor". For municipal permits, a facility is considered a "major" if it has a permitted flow of 1 MGD or more and is not a private facility. The determination for industrial facilities is based on facility and stream characteristics, including toxicity, amount of flow, BOD (biological oxygen demand) loading, proximity of drinking water source, potential to exceed stream standards, and potential effect on coastal waters.

Permitting Process

A completed draft permit is sent to the permittee, the SCDHEC District office, and if it is a major permit, to the USEPA for review. A public notice is issued when the permit draft is finalized. Comments from the public are considered and, if justified, a public hearing is arranged. Both oral and written comments are collected at the hearing, and after considering all information, the Department staff makes the decision whether to issue the permit as drafted, issue a modified permit, or to deny the permit. Everyone who participated in the process receives a notice of the final decision. A copy of the final permit will be sent to anyone who requests it. Staff decisions may be appealed according to the procedures in R.61-72 and the rule of the Administrative Law Court of South Carolina.

The permitting Divisions use general permits with statewide coverage for certain categories of discharges. Discharges covered under general permits include utility water, potable surface water treatment plants, potable groundwater treatment plants with iron removal, petroleum contaminated groundwater, mine dewatering activities, aquaculture facilities, bulk oil and gas terminals, hydrostatic test waters (oil & gas lines), and vehicle wash waters. Additional activities proposed for general permits include ready-mix concrete/concrete products and concentrated animal feeding operations. State Land application systems for land disposal and lagoons are also permitted.

Wasteload Allocation Process

A wasteload allocation (WLA) is the portion of a stream's assimilative capacity for a particular pollutant that is allocated to an existing or proposed point source discharge. Existing WLAs are updated during the basin review process and included in permits during the normal permit expiration and reissuance process. New WLAs are developed for proposed projects seeking a discharge permit or for existing discharges proposing to increase their effluent loading at the time of application. Wasteload allocations for oxygen demanding parameters and nutrients are developed by the Water Quality Modeling Section, and WLAs for toxic pollutants and metals are developed by the appropriate permitting division.

The ability of a stream to assimilate a particular pollutant is directly related to its physical and chemical characteristics. Various techniques are used to estimate this capacity. Simple mass balance/dilution calculations may be used for a particular conservative (nondecaying) pollutant while complex models may be used to determine the fate of nonconservative pollutants that degrade in the environment. Waste characteristics, available dilution, and the number of discharges in an area may, along with existing water quality, dictate the use of a simple or complex method of analysis. Projects that generally do not require complex modeling include: groundwater remediation, noncontact cooling water, mine dewatering, air washers, and filter backwash.

Streams are designated either effluent limited or water quality limited based on the level of treatment required of the dischargers to that particular portion of the stream. In cases where the USEPA published effluent guidelines and the minimum treatment levels required by law are sufficient to maintain instream water quality standards, the stream is said to be effluent limited. Streams lacking the assimilative capacity for a discharge at minimum treatment levels are said to be water quality limited. In cases where better than technology limits are required, water quality, not minimum requirements, controls the permit limits. The Department's Water Quality Modeling Section develops limits for numerous parameters including ammonia nitrogen (NH3-N), dissolved oxygen (DO), and five-day biochemical oxygen demand (BOD5). Limits for other parameters, including metals, toxics (including total residual chlorine), and nutrients are developed by the Water Facilities Permitting Division in conjunction with support groups within the Department.

Nonpoint Source Management Program

Nonpoint source (NPS) water pollution, sometimes called "runoff pollution" or "polluted runoff" does not result from a discharge at a specific, single location (or point), but generally comes from diffuse, numerous sources. Runoff occurring after a rain event may transport sediment from plowed fields, construction sites, or logging operations, pesticides and fertilizers from farms and lawns, motor oil and grease deposited on roads and parking lots, or bacteria containing waste from agricultural animal facilities or malfunctioning septic systems. The rain moves the pollutants across the land to the nearest waterbody or storm drain where they may impact the water quality in creeks, rivers, lakes, estuaries, and wetlands. NPS pollution may also impact groundwater when it is allowed to seep or percolate into aquifers. Adverse effects of NPS pollution include physical destruction of aquatic habitat, fish kills, interference with or elimination of recreational uses of a waterbody (particularly lakes), closure of shellfish beds, reduced water supply or taste and odor problems in drinking water, and increased potential for flooding because waterbodies become choked with sediment.

Congress recognized the growing problem of nonpoint source pollution in the late 1980s, and added NPS provisions to the federal law. Section 319 of the 1987 Amendments to the Clean Water Act required states to assess the nonpoint source water pollution associated with surface and groundwater within their borders and then develop and implement a management strategy to control and abate the pollution. The first Assessment of Nonpoint Source Pollution in South Carolina accomplished this purpose. The Department's Bureau of Water manages the ongoing State NPS Management Program, which develops strategies and targets waterbodies for priority implementation of management projects. Section 319 funds various voluntary efforts, including watershed projects, which address many aspects of the pollution prevention management measure and provide education, outreach and technical assistance to various groups and agencies. Most of the projects are implemented by cooperating agencies.

Many land activities can individually or cumulatively contribute to NPS pollution. Eight categories of NPS pollution sources have been identified as contributing to water quality degradation in South Carolina: agriculture, forestry, urban areas, marinas and recreational boating, mining, hydrologic modification, wetlands and riparian areas disturbance, land disposal, and groundwater contamination. There are programs in place, both regulatory and voluntary to address all eight categories.

Agriculture

In South Carolina, pesticides, fertilizers, animal waste, and sediment are potential sources of agricultural NPS pollution. Agricultural activities also have the potential to directly impact the habitat of aquatic species through physical disturbances caused by livestock or equipment, and through the management of water. The State has laws and regulations that prevent NPS pollution from several agricultural sources including pesticides and animal waste. Funding programs including

those under §319 grants from EPA, cost share funds from USDA under EQIP, and CRP are used to implement best management practices that are not covered under regulations. Agriculture land acreage is quantified in the basin-wide and individual watershed evaluations.

Silviculture

Forests comprise a major portion of South Carolina's land base. Sixty-six percent, or 12.6 million acres, of the State's total land area is in timberland. Silvicultural practices associated with road access, harvest, and regeneration of timber present the most significant potential for NPS pollution. Silvicultural activities have the potential to degrade the State's waters through the addition of sediment, nutrients, organics, elevated temperature, and pesticides. Erosion and subsequent sedimentation are the most significant and widespread NPS problems associated with forestry practices. Sudden removal of large quantities of vegetation through harvesting or silvicultural practices can also increase leaching of nutrients from the soil system into surface waters and groundwaters. Programs to abate or control NPS pollution from forestry activities are primarily the responsibility of the S.C. Forestry Commission (SCFC) and the United States Department of Agriculture's Forest Service (USFS), with other agencies having supplementary programs. S.C. Forestry Commission provides monthly courtesy exams to SCDHEC's Division of Water Quality and to forest industries. If water quality was impacted by a forestry operation, SCDHEC may institute enforcement action under the South Carolina Pollution Control Act. The United States Department of Agriculture's Natural Resources Conservation Service (USDA-NRCS) also provides technical assistance to government, landowners, and land users. Forest land acreage is quantified in the basin-wide and individual watershed evaluations.

Urban Areas

Urbanization has been linked to the degradation of urban waterways. The major pollutants found in runoff from urban areas include sediment, nutrients, oxygen-demanding substances, heavy metals, petroleum hydrocarbons, pathogenic bacteria, and viruses. Suspended sediments constitute the largest mass of pollutant loadings to receiving waters from urban areas. Construction sites are a major source of sediment erosion. Nutrient and bacterial sources of contamination include fertilizer usage, pet wastes, leaves, grass clippings, and faulty septic tanks. Petroleum hydrocarbons result mostly from automobile sources. In the 1980's, the average statewide population growth was 11.7 percent, while the coastal counties had an increase of 22 percent, nearly double the State rate during the same time period. This continuing development and population growth has the potential to make urban runoff the most significant source of pollution in waters of the State in the future. Urban land acreage is quantified in the basin-wide and individual watershed evaluations.

SCDHEC has a number of statewide programs that address components of urban NPS pollution. The Bureau of Water administers four permitting programs that control runoff from new and existing urban sources. These include the Stormwater and Sediment Reduction program, Municipal Separate Storm Sewer System (MS4), Industrial NPDES Stormwater Permits, and the §401 water

quality certification program (see p.27). Additional controls for urban runoff in the coastal zone are implemented by SCDHEC's Oceans and Coastal Resources Management (OCRM) through the State Coastal Zone Management Plan.

SCDHEC's Bureau of Environmental Health's Division of Onsite Wastewater Management administers the Onsite Sewage Disposal System program for the entire State, and oversees the permitting for the installation and management of septic systems. Although not associated with urban land use, this Division permits the septic systems of camping facilities if the facility is not on public sewer. The camp sewage is discharged into a public collection, treatment and disposal system if available, or an onsite wastewater treatment and disposal system (septic tank) is used.

Marinas and Recreational Boating

Potential adverse environmental impacts associated with marinas include dissolved oxygen deficiencies, high concentrations of toxic metals in aquatic organisms, and the potential to cause bacterial contamination of shellfish harvesting areas. In addition, marina construction activities can lead to the physical destruction of sensitive ecosystems and bottom-dwelling aquatic communities. Presently, there are more than 100 marinas in South Carolina, with 68 of them in the coastal zone. The U.S. Army Corps of Engineers and the SCDHEC are responsible for permitting marinas in South Carolina. Within SCDHEC, the two offices that have marina permitting authority are the Office of Ocean and Coastal Resource Management (SCDHEC OCRM) and the Office of Environmental Quality Control (SCDHEC Bureau of Water). SCDHEC OCRM issues critical area permits for marinas within the critical area of the coastal zone. SCDHEC Bureau of Water issues permits for marinas at all other locations within the State and issues §401 Water Quality Certifications (see p.27) for marinas statewide. The U.S. Coast Guard and the S.C. Department of Natural Resources are responsible for managing recreational boating activity.

Mining

South Carolina's mineral production consists of non-fuel minerals that provide raw materials for construction products and a precious metal industry. Portland cement clays (kaolin and brick), sand and gravel, and crushed stone represent the majority of the total mineral value. At the end of FY 2005-2006, there were 547 mining operations in South Carolina affecting more than 28,627 acres. There were 513 acres of mine land reclaimed during this same fiscal year, which brings the cumulative total of mine land reclaimed since the beginning of the mining and reclamation program to 15,740 acres. Surface mining has the potential to generate NPS pollution during mineral exploration, mine development extraction, transportation, mining and processing, product storage, waste disposal, or reclamation. Potential nonpoint source impacts related to mining activities generally include hydrologic modification, erosion and sedimentation, water quality deterioration, fish and wildlife disturbances, and public nuisances.

The Department's Bureau of Land and Waste Management has primary regulatory responsibility for mining activities. Within the Bureau, the Division of Mining and Solid Waste Permitting is responsible for administering and implementing the S.C. Mining Act and its associated regulations. The Mining Act serves as part of an overall management plan for NPS pollution from active mines. Mining activities and locations are identified in the appropriate watershed evaluations.

Hydromodification

Hydrologic modification (or hydromodification) is defined as stream channelization, channel modification, and dam construction. These activities can negatively impact water quality, destroy or modify in-stream habitat and increase streambank and shoreline erosion. Two State permits, implemented by the SCDHEC, are involved in the implementation of management measures for hydromodification. A critical area permit is required for coastal waters, saltwater wetlands, and beaches defined as critical areas. A navigable waters permit is required for the remainder of the State. Implementation of State policy for dam construction is similar to control of other hydromodification projects in South Carolina, requiring the same State permits and certifications. In addition, dams require a State dam safety permit or a State stormwater management and sediment reduction permit. The Department must also issue Water Quality Certifications pursuant to §401 of the Federal Clean Water Act for dam construction and hydropower operations licensed by the Federal Energy Regulatory Commission.

Wetlands

Twenty-three percent of South Carolina is covered by 4.5 million acres of wetlands. The U.S. Army Corps of Engineers implements the federal program for regulating development in wetlands with guidelines established by EPA. The Corps delineates wetlands and determines which wetlands fall under regulatory jurisdiction and require a federal permit for development. The Wetlands Reserve Program, administered by the NRCS, is designed to restore and protect wetlands. At the state level, the primary focus of wetland regulation is the §401 Water Quality Certification. In the §401 certification process, applications for wetland alterations may be denied or modified due to the special nature of a wetland or the functions that a wetland provides. Wetland impacts must be compensated through restoration, enhancement, preservation, or creation and protected in perpetuity. Future development would be prohibited in these mitigated and legally protected areas. Knowledge of areas that are restricted from development due to mitigation or special water classification is useful in planning future development in a watershed. Wetland acreage is quantified in the basin-wide and individual watershed evaluations.

Land Disposal

Although modern solid waste disposal sites are considered point sources of pollution and regulated, leachate from sanitary landfills and dumps have the potential to pollute large portions of adjacent groundwater aquifers. Toxic compounds are commonly a part of the overall composition of landfill leachate, especially when the landfill has been used for the disposal of toxic chemicals. There are currently 140 permitted landfills in South Carolina. This total represents 35 municipal solid waste landfills (MSWLF), 62 industrial waste landfills, 41 construction and demolition (C&D) landfills, one sludge monofill, and one ash monofill. Regulatory authority over solid waste disposal activities resides with SCDHEC's Bureau of Land and Waste Management. All active and closed industrial and municipal solid waste landfills are identified in the appropriate watershed evaluations.

Land application of wastewater or its by-products is a form of recycling because it allows recovery of elements needed for crop production. Land application of biosolids may be beneficial and environmentally sound when applied at the correct agronomic rate. Land applying biosolids can benefit farmers by offsetting the costs of fertilizer and lime while reducing the pressure on existing landfills. SCDHEC's Bureau of Water, Division of Water Monitoring, Assessment and Protection, Groundwater Quality Section conducts a program to prevent, monitor, and correct groundwater contamination from nonpoint source pollution from land application of wastewater biosolids, solids, animal manures, biosolids, and sewage sludge. Land application, which is not a discharge, requires a "no discharge" permit (ND). All active industrial and municipal land applications are identified in the appropriate watershed evaluations.

Groundwater Contamination

All aquifers in the State are potential Underground Sources of Drinking Water and are protected under the S.C. Water Classifications and Standards. Groundwaters are thus protected in a manner consistent with the SCDHEC groundwater protection strategy. Staff hydrogeologists implement a screening program for nonpoint source impacts from pits, ponds, and lagoons associated with the permitted storage, treatment, and disposal of industrial and municipal wastewaters. In cases where a groundwater impact has been identified in violation of S.C. Water Classifications and Standards, appropriate actions will be coordinated with the facility owner to ensure regulatory compliance. The hydrogeologist coordinates with the facility owner to implement source identification, contaminant extent assessments, initiation of contaminant remediation systems, and performance evaluations of corrective actions. In addition to releases from wastewater treatment systems, the staff evaluates releases from other nonpoint sources such as above ground tanks, nonregulated fuel oil tanks, spills and/or leaks. Sites with confirmed groundwater impact will be placed under a Consent Agreement or an Order. SCDHEC's South Carolina Groundwater Contamination Inventory quantifies the status of groundwater quality in South Carolina. The sites in the inventory are known groundwater contamination cases in the State, and are referenced by name and county, and updated annually.

Water Quantity

Any withdrawal of surface water or groundwater over 3 million gallons in any month is required to be reported to the Department (per the *Surface Water Withdrawal and Reporting Act* 49-4-10 and the *Groundwater Use and Reporting Act* 49-5-10). These data are compiled into an annual report of total water usage in the state (see SCDHEC's South Carolina Water Use Report). The report also breaks down water usage into categories of interest such as water supply, hydropower, agriculture, and irrigation. In Capacity Use Areas, which are of concern due to the significant groundwater use and subsequent lowering of groundwater levels in major aquifers, withdrawals over 3 million gallons in any month must receive a permit from the Department. Currently, no quantity permit is required for surface water withdrawals.

Interbasin Transfer of Water

According to The State Interbasin Transfer of Water Act, an interbasin transfer of water permit is required when any entity desires to withdraw, divert, pump, or cause directly the transfer of either 5% of the 7Q10 (seven day, ten year low flow), or one million gallons or more of water a day on any day, whichever is less, from one river basin and use or discharge all or any part of the water in a different river basin. The SCDHEC Board is empowered to negotiate agreements, accords, or compacts on behalf of and in the name of the State of South Carolina with other states or the United States, or both, with any agency, department, or commission of either, or both, relating to transfers of water that impact waters of this State, or are connected to or flowing into those waters. The Board is further empowered to represent this State in connection with water withdrawals, diversions, or transfers occurring in other states, which may affect this State.

Growth Potential and Planning

Land use and management can define the impacts to water quality in relation to point and nonpoint sources. Assessing the potential for an area to expand and grow allows for water quality planning to occur and, if appropriate, increased monitoring for potential impairment of water quality. Indicators used to predict growth potential include water and sewer service, road and highway accessibility, and population trends. These indicators and others were used as tools to determine areas having the greatest potential for impacts to water quality as a result of development.

SCDHEC's Strategic Plan for 2000-2005 (www.scdhec.gov/news/releases/pdf files/Stratpln.pdf) acknowledges that growth issues are best handled at the local government level. SCDHEC's role is to work with local governments and communities to help them understand the importance of planning for smart growth: buffers, greenspaces, mass transit, subdivision and roadway planning, bike paths and bike lanes, and park and ride lots. SCDHEC can also provide assistance in helping local entities access information and provide consultation on technical issues such as the establishment of buffers and watershed stormwater planning. Many counties in the Santee River Basin

lack county wide zoning ordinances; therefore, there is little local regulatory power to influence the direction or magnitude of regional growth. The majority of municipalities have zoning ordinances in place; however, much of the growth takes place just outside the municipal boundaries, where infrastructure is inadequate. Section 208 of the Clean Water Act serves to encourage and facilitate the development and implementation of areawide waste treatment management plans. The §208 Areawide Water Quality Management Plans were completed in great detail during the 1970's and have recently been updated. Information from the updated reports is used in the individual watershed evaluations. South Carolina's water quality management plans support consolidation of wastewater treatment facilities into larger regional systems.

Watershed boundaries extend along topographic ridges and drain surrounding surface waters. Roads are commonly built along ridge tops with the best drainage conditions. Cities often develop in proximity to ridges as a result of their plateau terrain. It is not uncommon, then, to find cities or road corridors located along watershed boundaries, and thus influencing or impacting several watersheds.

Watershed Protection and Restoration Strategies

SCDHEC's Bureau of Water is responsible for ensuring that South Carolina's water is safe for drinking and recreation, and suitable to support aquatic life. This section provides an overview of other important Bureau programs and strategies applied statewide to protect and restore water quality. The point and nonpoint source controls described previously assist with achieving these goals.

Under §303(d) of the Federal Clean Water Act, each state is required to provide a comprehensive inventory of impaired waters for which existing required pollution controls are not stringent enough to achieve State water quality standards or Federal Clean Water Act goals. This biennial list, commonly referred to as the "303(d) list", is the basis for targeting waterbodies for watershed-based solutions. A copy of the current §303(d) list can be obtained by contacting the Bureau of Water. Several Bureau programs address these impaired streams in an effort to restore them.

Total Maximum Daily Load

A Total Maximum Daily Load (TMDL) is the calculated maximum allowable pollutant loading to a waterbody at which water quality standards are maintained. A TMDL is made up of two main components, a load allocation and a wasteload allocation. A load allocation is the portion of the receiving water's loading capacity attributed to existing or future nonpoint sources or to natural background sources. The waste load allocation is the portion of a receiving water's loading capacity allocated to an existing or future point source.

A TMDL is a means for recommending controls needed to meet water quality standards in a particular water or watershed. Historically, the typical TMDL has been developed as a wasteload allocation, considering a particular waterbody segment, for a particular point source, to support setting effluent limitations. In order to address the combined cumulative impacts of all sources, broad watershed-based TMDLs are now being developed.

The TMDL process is linked to all other State water quality activities. Water quality impairments are identified through monitoring and assessment. Watershed-based investigations result in source identification and TMDL development. TMDLs form links between water quality standards and point and nonpoint source controls. Where TMDLs are established, they constitute the basis for NPDES permits and for strategies to reduce nonpoint source pollution. The effectiveness and adequacy of applied controls are evaluated through continued monitoring and assessment.

Funding for TMDL implementation is currently available with USEPA’s §319 of the Clean Water Act grants. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

Antidegradation Implementation

The State's Antidegradation Policy as part of S.C. Regulation 61-68 is represented by a three-tiered approach to maintaining and protecting various levels of water quality and uses; streams included on the §303(d) list are addressed under Tier 1. Tier 1 antidegradation policies apply to all waters of the

State and require that existing uses and the minimum level of water quality for those uses be maintained and protected. Tier 2 policies apply to high quality water where the water quality exceeds the mandatory minimum levels to support the Clean Water Act's goals of propagation of fish, shellfish, wildlife, and recreation in and on the water. The Department considers all the waters of the State as high quality waters. Tier 3 policies apply to the maintenance of water quality in waters that constitute an Outstanding National Resource Water and do not allow for any permanent permitted dischargers. Outstanding Resource Waters of the State are provided a higher level of protection than Tier 2, but do not meet the requirements of Tier 3.

Tier 1 protection will be implemented when applying numeric standards included in Regulation 61-68 for human health, aquatic life, and organoleptic protection as follows: if a waterbody has been affected by a parameter of concern causing it to be on the §303(d) list, then the Department will not allow a permitted net increase of loading for the parameter of concern unless the concentration will not contribute to a violation of water quality standards. This no net increase will be achieved by reallocation of existing total load(s) or by meeting applicable water quality standard(s) at the end-of-pipe. No discharge will be allowed to cause or contribute to further degradation of a §303(d) listed waterbody.

The Antidegradation Rules apply to both nonpoint source pollution and for point sources into impaired waters. Many activities contributing to nonpoint source pollution are controlled with voluntary measures. The Department implements permitting or certification programs for some of these activities and has the opportunity to ensure compliance with the Antidegradation Rules. The activities of primary concern are land development projects which are immediately adjacent to and discharge runoff or stormwater into impaired waters.

401 Water Quality Certification Program

If a Federal permit for a discharge into waters of the State, including wetlands, is required, the Department must issue Water Quality Certification pursuant to §401 of the Federal Clean Water Act. Certification is required for permits issued by the U.S. Army Corps of Engineers for construction in navigable waters and for deposition of dredged or fill material.

Regulation 61-101 presents administrative and technical guidance for the water quality certification program and requires SCDHEC to consider whether or not a project is water dependent; whether or not there are feasible alternatives which will have less adverse consequences on water quality and classified uses; the intended purpose of the project; and all potential water quality impacts of the project, both direct and indirect, over the life of the project. Any project with the potential to affect waters of the State must be conducted in such a manner to maintain the specified standards and classified and existing water uses.

As a routine part of the §401 Water Quality Certification review process, the waterbody in question is identified as impaired or not impaired according to the §303(d) list. If it is impaired, the parameter of concern is noted, along with any steps required to prevent further degradation of the water quality of that waterbody. In an effort to facilitate watershed restoration where appropriate, mitigation for unavoidable wetland impacts is encouraged in areas that improve §303(d) listed waters.

Stormwater Program

Stormwater discharges result from precipitation during rain events. Runoff washes pollutants associated with industrial activities (including construction activity), agricultural operations, and commercial and household sites directly into streams, or indirectly into drainage systems that eventually drain into streams. The SCDHEC Stormwater Permitting Program focuses on pollution prevention to reduce or eliminate stormwater pollution. The Department has general permitting authority for stormwater discharges associated with industrial activity, including construction. General NPDES permits SCR000000 and SCR100000 for industrial and construction activities, respectively, require permittees to develop and implement stormwater pollution prevention plans that establish best management practices to effectively reduce or eliminate the discharge of pollutants via stormwater runoff. The Stormwater and Agricultural Permitting Section is responsible for issuing NPDES stormwater permits to prevent degradation of water quality as well as for issuing state sediment and erosion control permits for construction sites.

The NPDES permits are issued under the authority of the federal Clean Water Act and the S.C. Pollution Control Act. The state sediment and erosion control permits are issued under the authority of two S.C. laws. The S.C. Erosion and Sediment Reduction Act of 1983 addresses construction on state owned or managed land. The S.C. Stormwater Management and Sediment Reduction Act of 1991 addresses construction on land that is not state owned or managed. Currently, NPDES permits are required for: construction sites 1 acre and greater; construction sites in the coastal area that are within 1/2 mile of a receiving water body; and construction sites less than 1 acre on a case-by-case basis where water quality is a concern. Permits are required under the state sediment and erosion control for construction sites that are greater than 2 acres; however, there are exemptions under the law and regulation. The State Sediment and Erosion Program is somewhat duplicative of the NDPES Stormwater Program. The state program created by the 1991 Act can be delegated to local governments. Until a local government becomes delegated, SCDHEC's Office of Ocean and Coastal Resource Management is delegated the State Sediment and Erosion Control Program in the coastal area. The Stormwater and Agricultural Permitting Section manages the NPDES Stormwater Program in all areas of the state and the State Sediment and Erosion Control Program in the areas of the state where the program is not delegated to another entity.

Regulation 61-9 requires a compilation of all existing State water quality data with STORET data being used as a baseline. If analysis indicates a decrease in water quality then corrective measures must be taken. The permittee will identify all impaired water bodies in a Stormwater Management Plan (SWMP). In addition, existing pollution discharge control methods will be identified and incorporated into the SWMP. Procedures, processes, and methods to control the discharge of pollutants from the municipal separate storm sewer system (MS4) into impaired waterbodies and publicly owned lakes included on the §303(d) list will be described in the SWMP. The effectiveness of these controls will be assessed and necessary corrective measures, if any, shall be developed and implemented.

Permits for municipal systems allow communities to design stormwater management programs that are suited for controlling pollutants in their jurisdiction. There are three population-based categories of municipal separate storms sewers: large municipal (population of 250,000 or greater), medium municipal (population of 100,000 or more but less than 250,000), and small municipal (population less

than 100,000). Large and medium MS4s have been regulated since the 1990s. Those small MS4s within the boundaries of an urbanized area are called Regulated Small MS4s and were required to submit MS4 NPDES applications on or before March 10, 2003. MS4 NPDES Permits are required for all large, medium, and regulated small MS4s.

South Carolina Animal Feeding Operations Strategy

Among the general categories of pollution sources, agriculture ranks as the number one cause of stream and lake impairment nationwide. Many diseases can potentially be contracted from drinking water or coming into contact with waters contaminated with animal wastes. The Department uses S.C. Regulation 61-43: *Standards for the Permitting of Agricultural Animal Facilities* to address the permitting of animal feeding operations (AFOs). Implementing these regulations and their corresponding compliance efforts are a priority for the Department in order to reduce public health and environmental impacts from AFOs. There are approximately 1,100 active AFOs in S.C. While previously, there were no federally defined concentrated animal feeding operations (CAFOs) in operation in South Carolina, EPA modified the definition of a CAFO in the NPDES regulations in December 2002. These regulations have now been adopted in S.C. Based on the new federal CAFO definition, S.C. has approximately 200 CAFOs that require NPDES permits. Using the Watershed Program cycle and the division of the State into five regions, AFOs will be monitored and inspected by region. The §303(d) list will be used to prioritize the inspections. After all the inspections have been made in a region, the Department will move to the river basins in the next region in the watershed cycle. The Department is continuing to work in cooperation and coordination with the U.S. Department of Agriculture, the Natural Resources Conservation Service, the S.C. Department of Agriculture, the S.C. Soil and Water Conservation Districts, and the Clemson Extension Service.

Sanitary Sewer Overflow Strategy

Sanitary sewers are designed to collect municipal and industrial wastewater, with the allowance for some acceptable level of infiltration and inflow, and transport these flows to a treatment facility. When the sewer system is unable to carry these flows, the system becomes surcharged and an overflow will occur. Sanitary sewer overflows (SSOs) have existed since the introduction of separate sanitary sewers, and most overflows are caused by inadequate operation, maintenance, and management of the collection system.

The Department encourages utilities to embrace the principals of EPA's capacity Management, Operations, and Maintenance (cMOM) program. Through this program utilities can ensure adequate funding and capacity as well as a proactive approach to operations and maintenance. Those that have implemented cMOM programs have been able to significantly reduce or eliminate overflows from their collection systems. Additionally, the Department has adopted requirements for operation and maintenance of sewer systems in Regulation 61-9, Water Pollution Control Permits.

The Department's approach has been to shift resources historically applied to treatment plant inspections to include evaluations of pump stations and collection systems where problems are suspected. To assist evaluators in identifying water quality violations related to SSOs, staff have utilized the 303(d)

list of impaired waters to identify waters impacted by fecal coliform or other appropriate pollutants and correlate those with collection systems with incidences of SSOs. The Department's Enforcement Referral Procedures Document is to be used to determine when a collection system should be referred to enforcement for SSOs. The enforcement process allows for the Department to consider actions taken by the collection system such as: timely and proper notification, containment and mitigation of discharge, voluntarily conducting self evaluations, and requests for compliance assistance. The Department will take immediate action where it has been determined that SSOs have occurred and the collection system has not made timely and proper notification.

Referral Strategy for Effluent Violations

The Department has developed referral effluent violation guidelines to specifically address discharges into impaired waters. The goal of the referral guidelines is to reduce pollutant discharges into impaired waters in order to ultimately restore them to their full potential usage. To achieve this goal, enforcement actions are initiated earlier in an effort to improve the quality of waters that do not meet standards. If a stream is impaired by a pollutant and the permit limit for that pollutant is exceeded more than once in a running annual reporting period, formal enforcement action will be initiated against the discharger.

SCDHEC's Watershed Stewardship Programs

Public participation is an important component of the Department's Watershed Water Quality Management Program. Benefits to this interaction on the local level include improved public awareness about SCDHEC water programs, and increased local interest and participation in water quality improvement. Described below are some of the Department's water programs that encourage public interest and involvement in water quality. These programs and their contacts are listed on the Department's website at www.scdhec.gov/water.

Source Water Assessment Program

A safe, adequate source of drinking water is key to development of communities and the health of citizens. The Safe Drinking Water Act (SDWA) provides authority to protect sources of drinking water. As a result of the 1996 amendments to the SDWA, source water protection has become a national priority. States are required to develop a plan for assessment of source waters for all federally defined public groundwater and surface water systems.

The Source Water Assessment Program (SWAP) involves determining the boundaries of the areas that are the source of waters for public water systems. For groundwater systems, these areas are defined using groundwater flow models. For surface water systems, the 14-digit Hydrologic Unit Code watershed is the designated protection area (although certain areas within the basin will be segmented as being of greater vulnerability to contamination from overland flow, groundwater contributions to surface water, and direct spills into the surface water). Known and potential sources of contamination in the delineated area must be identified, and the inventoried sources evaluated to determine the susceptibility of public water systems to such contaminants. Assessments must be made available to the public.

Local involvement will be a critical factor in the success of the SWAP, and local government, citizen groups, environmental groups, water suppliers, and the Department must all work together to increase the general public's awareness of where drinking water comes from and how to better protect sources of drinking water. Implementation of source water protection activities will occur at the local level, and local authorities may wish to base zoning and land-use planning on the source water assessments. The SWAP will be a key part of the Department's watershed management approach. To avoid duplication, information gathered from existing regulatory programs and/or watershed protection efforts will be utilized (e.g., ambient monitoring programs, TMDLs, etc.).

Consumer Confidence Reports

The Consumer Confidence Report (CCR) is an annual water quality report required of all Community water systems. The rationale behind the CCR is that consumers have a right to know what is in their drinking water and where it comes from. These reports are to educate consumers and help them make informed choices that affect the health of themselves and their families. It is believed that educated consumers are more likely to protect their drinking water sources. All CCRs are to include the following basic components:

- the water source, its location, and the availability of source water assessment plan;

- information about the water system (name and telephone number of a contact person, opportunities for public participation, and information for non-English speaking populations if applicable);
- definitions of terms and abbreviations used in the report;
- table of detected contaminants including the known or likely source of the contaminants;
- the health effects language for Maximum Contaminant Level violations and an explanation of the violation;
- information on cryptosporidium, radon, and other contaminants if applicable; and
- educational information that includes an explanation of contaminants and their presence in drinking water, an advisory for immuno-compromised people, the Safe Drinking Water Hotline telephone number, and other statements about lead, arsenic, and nitrate if applicable.

Nonpoint Source Education

The goal of the Nonpoint Source Outreach Program is to educate the citizens of South Carolina about the sources of polluted runoff and techniques that can be used to reduce this runoff. The Program provides presentations on runoff pollution to community, church, civic, or professional groups; a variety of technical and nontechnical publications on runoff pollution and reduction techniques; *Turning the Tide*, a free Nonpoint Source newsletter; and teacher training that includes the *Action for a Cleaner Tomorrow* curriculum and information on reducing polluted runoff. To arrange a presentation, order publications, or ask questions, contact the Nonpoint Source Education coordinator at 803-898-4300 or visit our website.

South Carolina Water Watch

South Carolina Water Watch is a unique effort to involve the public and local communities in water quality protection. The Water Watch program was developed to encourage South Carolina's citizens to become stewards of the State's lakes, rivers, streams, estuaries, and wetlands. Volunteers select a water resource on which to focus and perform activities aimed at protecting water quality, such as shoreline surveys, public education, and litter cleanups. The Water Watch coordinator assists participants with materials and training to help make projects successful. SCDHEC invites individuals, school groups, civic organizations, businesses, and local governments to learn about and protect the quality of our waterways by contacting the Water Watch coordinator at 803-898-4300 or visit our website.

Champions of the Environment

Champions of the Environment is a student recognition program that raises awareness of environmental issues. Nationally recognized for its innovative approach to environmental education, the program promotes hands-on learning by recognizing students working on exemplary environmental projects beyond the realm of the classroom. With scholarships and media coverage, Champions of the Environment encourages student initiative and self-esteem. The program promotes environmental awareness, leadership, conservation, creativity, and self-confidence through activities such as group projects, public speaking, and environmental research. Champions of the Environment is jointly sponsored by Dupont, International Paper, WIS-TV, and SCDHEC. For more information contact the Champions of the Environment coordinator at 803-898-4300 or visit our website.

Clean Water State Revolving Fund

Congress created the Clean Water State Revolving Fund (SRF) in 1987, to replace the §201 Construction Grants program. In doing so, 'state banks' were created to lend money for virtually any type of water pollution control infrastructure project. Project types include construction of wastewater treatment systems and nonpoint source pollution control. The interest rate on the loans is always below the current market rate. As repayments are made on the loans, funds are recycled to fund additional water protection projects. The vast majority of the SRF funds have been used for the construction of traditional municipal wastewater treatment systems. Because of its inherent flexibility, the SRF program is well suited to accommodate the watershed approach.

SRF loans are available to units of state, local, and regional government, and special purpose districts. South Carolina law prevents loans from being made directly to private organizations and individuals. Local governments such as cities and counties and other units of government such as Soil and Water Conservation Districts, Councils of Government, and Water and Sewer Districts are encouraged to apply for SRF loans for nonpoint source projects. Nonpoint source projects may include construction and maintenance of stormwater management facilities, establishment of a stormwater utility, purchase of land for wetlands and riparian zones, and implementation of source water protection assessments. For more information, contact the State Revolving Fund coordinator at 803-898-4300 or visit our website.

Citizen-Based Watershed Stewardship Programs

Throughout the Broad River Basin, water quality is a common interest among citizen groups. The issues and membership of these groups vary widely. Some of the citizen groups interested in water quality in the Broad River Basin are described below.

Friends of Lake Robinson

The Friends of Lake Robinson (FLR) was established in 2006 as a non-profit organization of lake front and adjacent property owners to promote the understanding, protection, and comprehensive management of Lake Robinson and its watershed. The organization conducts regular quarterly membership meetings to provide a forum for the sharing of information and experiences on scientific, administrative, legal and financial aspects of lake and watershed management. In addition, the FLR has published a handbook for water friendly living, "Living with Lake Robinson", which includes recommended practices for water friendly landscape & shoreline development, septic system maintenance, boating practices and pollution prevention. Members of the FLR and volunteers participate in three important programs each year: an International Lakeside Cleanup sponsored by the Ocean Conservancy, the annual Worldwide Water Monitoring Day in conjunction with the Water Environment Federation and the International Water Association as well as the Great North American Secchi Dip-In in collaboration with Kent State University.

Foothills RC&D

Foothills RC&D is a 501(c)3 non profit organization whose mission is "Local people working together to conserve, improve, and sustain our natural resources". The Foothills RC&D area covers Oconee, Pickens, Anderson, Greenville and Spartanburg.

Gilder Creek Watershed Association

The Gilder Creek Watershed Association was organized in 1998 and consists of interested citizens in the watershed. The primary goal of the association is the promotion of more stringent county-level regulation of storm water runoff, chiefly for flood control.

Lovers of the Enoree

Lovers of The Enoree is a citizens group founded under the SCDHEC Waterwatch Program. The purpose of the group is to evaluate the water quality impact of extensive development on the Enoree River, with emphasis placed on nonpoint source runoff in Greenville and Spartanburg Counties. Specifically, the group advocates the application of best management practices and sustainable growth. Charles R. Jeter, founder of the group, can be reached at 864-879-6638.

Upstate Forever

Upstate Forever is a 501(c)(3) nonprofit membership organization whose mission is to protect special

places and promote sensible growth in the Upstate region of western South Carolina. We have about 1800 members across eight counties, fifteen staff (full time and part time) in two offices, and an annual unrestricted budget of over $1,500,000. One of Upstate Forever's three major divisions is our Clean Air and Water program, which focuses on (among other things) advocating for protection and restoration of rivers and lakes in the Upstate. Within the program, our Mountain Streams project works with a network of concerned residents to discourage harmful land use and development practices in South Carolina's mountains. Our Urban Rivers project collaborates with developers and local governments to promote low-impact development, better stormwater management, and creation of greenway parks and trails in the communities along the rapidly developing I-85 corridor. Finally, our Rural Waters project promotes lake-friendly landscaping and river corridor protection in the mostly rural southern reaches of the Upstate.

Enoree River Basin Description

The ***Enoree River Basin (hydrologic unit 03050108)*** is located in Greenville, Spartanburg, Union, Laurens, and Newberry Counties, and encompasses 731.3 square miles that extend across the Piedmont region of the State. The Enoree River Basin encompasses 5 watersheds and 468,054 acres, of which 57.7% is forested land, 22.3% is agricultural land, 14.2% is urban land, 3.4% is forested wetland, 1.2% is barren land, 0.7% is scrub/shrub land, and 0.5% is water. The urban land percentage is comprised chiefly of a portion of the Greenville Metropolitan area. This predominantly rural area has approximately 919.2 stream miles and 1,040.4 acres of lake waters. The Enoree River originates near the City of Travelers Rest and accepts drainage from Beaverdam Creek, Warrior Creek, and Duncan Creek before draining into the Broad River.

Physiographic Regions

The USDA Soil Conservation Service divided the State of South Carolina into six Major Land Resource Areas (MLRAs). The MLRAs are physiographic regions that have soils, climate, water resources, and land uses in common. The physiographic region defining the Enoree River Basin is as follows:

The **Piedmont** is an area of gently rolling to hilly slopes with narrow stream valleys dominated by forests, farms, and orchards; elevations range from 375 to 1,000 feet.

Land Use/Land Cover

General land use/land cover mapping for South Carolina was derived from the U.S. Geological Survey's National Land Cover Data (NLCD), based on nationwide Landsat Thematic Mapper (TM) multispectral satellite images (furnished through the Multi-Resolution Land Characteristics (MRLC) consortium, coordinated by USEPA) using image analysis software to inventory the Nation's land classes. The NLCD are developed by the USGS (EROS Data Center) using TM image interpretation, air photo interpretation, National Wetland Inventory data analysis, and ancillary data analysis.

Urban land is characterized by man-made structures and artificial surfaces related to industrial, commercial, and residential uses, as well as vegetated portions of urban areas.

Agricultural/Grass land is characterized by cropland, pasture, and orchards and may include some grass cover in urban, scrub/shrub, and forest areas.

Scrub/Shrub land is adapted from the western Rangeland classification to represent the "fallow" condition of the land (currently unused, yet vegetated), and is most commonly found in the dry Sandhills region including areas of farmland, sparse pines, regenerating forest lands, and recently harvested timber lands.

Forest land is characterized by deciduous and evergreen trees not including forests in wetland settings.

Forested Wetland (swampland) is the saturated bottomland, mostly hardwood forests that are primarily composed of wooded swamps occupying river floodplains and isolated low-lying wet areas, primarily located in Coastal Plain.

Nonforested Wetland (marshland) is dependent on soil moisture to distinguish it from Scrub/Shrub since both classes contain grasses and low herbaceous cover; nonforested wetlands are most common along the coast and isolated freshwater areas found in the Coastal Plain.

Barren land is characterized by an unvegetated condition of the land, both natural (rock, beaches, unvegetated flats) and man-induced (rock quarries, mines, and areas cleared for construction in urban areas or clearcut forest areas).

Water (non-land) includes both fresh and tidal waters.

Soil Types

The individual soil series for the Enoree River Basin are described as follows.

Cecil soils are deep, well drained, gently sloping to sloping soils that have red subsoil.

Davidson soils are deep, gently sloping to strongly sloping, well drained to somewhat poorly drained soils with a loamy surface layer and a clayey subsoil.

Madison soils are well drained, moderately sloping soils, with clayey subsoil, moderately deep.

Pacolet soils are well drained, moderately steep soils with clayey subsoil, moderately deep.

Wilkes soils are dominantly strongly sloping to steep, well drained soils.

Slope and Erodibility

The definition of soil erodibility differs from that of soil erosion. Soil erosion may be more influenced by slope, rainstorm characteristics, cover, and land management than by soil properties. Soil erodibility refers to the properties of the soil itself, which cause it to erode more or less easily than others when all other factors are constant. The soil erodibility factor, K, is the rate of soil loss per erosion index unit as measured on a unit plot, and represents an average value for a given soil reflecting the combined effects of all the soil properties that significantly influence the ease of soil erosion by rainfall and runoff if not protected. The K values closer to 1.0 represent higher soil erodibility and a greater need for best management practices to minimize erosion and contain those sediments that do erode. The range of K-factor values in the Enoree River Basin is from 0.25 to 0.27.

Climate

Normal yearly rainfall in the Enoree River Basin area during the period of 1971 to 2000 was 48.8 inches, according to South Carolina's **30-year** climatological record. Data compiled from National Weather Service stations in Greenville-Spartanburg WSO Airport, Woodruff, Laurens, Whitmire 2NE, and Newberry were used to determine the general climate information for this portion of the State. Annual total rainfall for winter months averaged 12.83 inches; with 12.33, 12.24, and 11.44 inches of precipitation in the spring, summer, and fall, respectively. The average annual daily temperature was 60.5 ^{o}F. Winter temperatures averaged 43.1^{o}F, spring temperatures averaged 60.0^{o}F and summer and fall mean temperatures were 77.6^{o}F and 61.2^{o}F, respectively.

Watershed Evaluations

03050108-01

(Enoree River)

General Description

Watershed 03050108-01 (formerly 03050108-010) is located in Greenville, Spartanburg, and Laurens Counties and consists primarily of the ***Enoree River*** and its tributaries from its origin to Beaverdam Creek. The watershed occupies 167,348 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 38.7% forested land, 29.1% agricultural land, 27.9% urban land, 2.3% forested wetland, 0.8% barren land, 0.7% scrub/shrub land, and 0.5% water.

The Enoree River originates near the City of Travelers Rest and accepts drainage from the North Enoree River, Long Branch, Beaverdam Creek, Buckhorn Creek (Buckhorn Lake), Mountain Creek (Mountain Lake, Paris Mountain State Park Lake), Cane Creek, and Princess Creek. Brushy Creek flows through the City of Greenville to enter the river next followed by Rocky Creek (Oak Grove Lake, Shannon Lake, Little Rocky Creek), Dillard Creek, Abner Creek (Vine Creek, Padgett Creek), another Little Rocky Creek, and Peters Creek. Gilder Creek (Earls Lake) originates near the City of Mauldin and is joined by Bridge Fork Creek, Little Gilder Creek, Graze Branch, Horsepen Creek, and Long Branch before flowing into the river downstream of Peters Creek. Hunter Branch enters the river next followed by Buzzard Spring Branch and Lick Creek.

Durbin Creek originates near the City of Simpsonville and accepts drainage from Howard Branch, Wilson Branch, Little Durbin Creek, and South Durbin Creek (Reedy Creek) before draining into the Enoree River. Dildane Creek flows into the river downstream of Durbin Creek and is followed by Brock Page Creek and Boggy Creek. There are a total of 341.3 stream miles and 343.6 acres of lake waters in this watershed. Paris Mountain State Park is located to the north of the City of Greenville, and all waters within the park are classified ORW. Beaverdam Creek is classified ORW from its headwaters to SR 563; an unnamed tributary to Beaverdam Creek is classified ORW from its headwaters, including the lake, to SR 22; Buckhead Creek is classified ORW from its headwaters, including Buckhorn Lake, to North Buckhorn Road; and an unnamed tributary to Mountain Creek is classified ORW from its headwaters, including Mountain Lake and Paris Mountain State Park Lake, to Mountain Creek. The remaining streams in the watershed are classified FW. There is a Heritage Trust Preserve along the Enoree River just upstream of its confluence with the North Enoree River.

Surface Water Quality

Station #	Type	Class	Description
BE-001	P/W	FW	ENOREE RIVER AT UNNUMBERED ROAD W OF U.S. 25, N OF TRAVELERS REST
BE-039	S/W	FW	BEAVERDAM CREEK AT ROAD 1967
B-795	BIO	FW	BUCKHORN CREEK AT SR 562
B-186	S/W	FW	MOUNTAIN CREEK AT S-23-335

BE-008	BIO	FW	MOUNTAIN CREEK AT SR 279
B-192	P/W	FW	PRINCESS CREEK AT SUBER MILL RD, SECOND ROAD S OF US 29 OFF S-23-540
BE-015	S/W	FW	ENOREE RIVER AT COUNTY ROAD 164
BE-035	S/W	FW	BRUSHY CREEK AT HOWELL RD (S-23-273), APPROX. 5 MI NE OF GREENVILLE
BE-009	S/BIO/W	FW	BRUSHY CREEK AT S-23-164
BE-007	S/BIO/W	FW	ROCKY CREEK AT BATESVILLE BRIDGE, 1 MI ABOVE CONFL. WITH ENOREE R.
B-792	BIOFW	ABNER CREEK AT BENNETTS RIDGE RD.	
BE-017	P/SPRP	FW	ENOREE RIVER AT SC 296, 7.5 MI NE OF MAULDIN
BE-040	S/W	FW	GILDER CREEK AT SC 14, ABOVE GILDERS CREEK PLANT
B-241	S/W	FW	GILDER CREEK AT S-23-142, 2.75 MI ENE OF MAULDIN
B-793	BIO	FW	HORSEPEN CREEK AT SR 145
BE-020	S/BIO/W	FW	GILDER CREEK AT S-23-143, 1/4 MI ABOVE CONFLUENCE WITH ENOREE RIVER
BE-018	S/W	FW	ENOREE RIVER AT S-30-75
BE-019	BIO	FW	ENOREE RIVER AT SC 418
B-037	S/W	FW	ENOREE RIVER AT S-42-118, SW OF WOODRUFF
B-038	S/W	FW	LICK CREEK AT S-42-118, 1.25 MI SW WOODRUFF
B-035	S/W	FW	DURBIN CREEK ON S-23-160, 3 MI E OF SIMPSONVILLE
B-097	P/W	FW	DURBIN CREEK AT SC 418
BE-022	BIO	FW	DURBIN CREEK AT SC 101
B-040	W/INT	FW	ENOREE RIVER AT S-30-112

Enoree River **-** There are seven SCDHEC monitoring stations along this portion of the Enoree River. At the furthest upstream site (***BE-001***), aquatic life uses are not supported based on macroinvertebrate community data and occurrences of zinc in excess of the aquatic life chronic criterion. Significant decreasing trends in turbidity suggest improving conditions for this parameter. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. Moving downstream to ***BE-015***, aquatic life uses are fully supported. There is a significant increasing trend in pH. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. Further downstream ***(BE-017)***, aquatic life uses are not supported based on macroinvertebrate community data. Significant increasing trends in dissolved oxygen concentration and decreasing trends in five-day biochemical oxygen demand, turbidity, and total phosphorus concentration suggest improving conditions for these parameters. There is a significant increasing trend in pH. Recreational uses are not supported at this site due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

At the next site downstream (***BE-018***), aquatic life uses are fully supported, and a significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. There is a significant increasing trend in pH. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions. Further downstream ***(BE-019)***, aquatic life uses are partially supported based on macroinvertebrate community data. At ***B-037***, aquatic life uses are fully supported, and a significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. At the furthest downstream site ***(B-040)***, aquatic life uses are fully supported. Recreational uses are not supported at this site due to fecal coliform bacteria excursions, which are compounded by a significant increasing trend in fecal coliform bacteria concentration.

Beaverdam Creek (BE-039) **-** Aquatic life uses are partially supported due to pH excursions. Significant decreasing trends in five-day biochemical oxygen demand and turbidity suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions.

Buckhorn Creek (B-795) **-** Aquatic life uses are partially supported based on macroinvertebrate community data.

Mountain Creek **-** There are two SCDHEC monitoring stations along Mountain Creek. At the upstream site ***(B-186)***, aquatic life uses are fully supported. There is a significant increasing trend in pH. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. At the downstream site ***(BE-008)***, aquatic life uses are partially supported based on macroinvertebrate community data.

Princess Creek (B-192) **-** Aquatic life uses are not supported based on macroinvertebrate community data. A significant decreasing trend in turbidity suggests improving conditions for this parameter. There is a significant increasing trend in pH. Recreational uses are not supported due to fecal coliform bacteria excursions, which are compounded by a significant increasing trend in fecal coliform bacteria concentration.

Brushy Creek **–** There are two SCDHEC monitoring stations along Brushy Creek. There is a significant increasing trend in pH at both sites. At the upstream site ***(BE-035)***, aquatic life uses are fully supported. At the downstream site ***(BE-009)***, aquatic life uses are partially supported based on macroinvertebrate community data and pH excursions. Recreational uses are not supported at either site due to fecal coliform bacteria excursions.

Rocky Creek (BE-007) **–** Aquatic life uses are partially supported based on macroinvertebrate community data. There is a significant increasing trend in pH. Recreational uses are not supported due to fecal coliform bacteria excursions.

Abner Creek (B-792) **–** Aquatic life uses are fully supported based on macroinvertebrate community data.

Gilder Creek – There are three SCDHEC monitoring stations along Gilder Creek. At the two upstream sites ***(BE-040, B-241)*** aquatic life uses are fully supported. At the furthest downstream site ***(BE-020)***, aquatic life uses are partially supported based on macroinvertebrate community data. There is a significant increasing trend in pH at all sites. Recreational uses are not supported at any site due to fecal coliform bacteria excursions.

Horsepen Creek (B-793) – Aquatic life uses are partially supported based on macroinvertebrate community data.

Lick Creek (B-038) – Aquatic life uses are fully supported; however, there is a significant increasing trend in turbidity. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. Recreational uses are not supported due to fecal coliform bacteria excursions.

Durbin Creek - There are three SCDHEC monitoring stations along Durbin Creek. At the furthest upstream site ***(B-035)***, aquatic life uses are fully supported. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. At the midstream site ***(B-097)***, aquatic life is partially supported due to pH excursions. There is also a significant increasing trend in five-day biochemical oxygen demand. There is a significant decreasing trend in pH. Recreational uses are not supported at this site due to fecal coliform bacteria excursions, which are compounded by a significant increasing trend in fecal coliform bacteria concentration. At the furthest site downstream ***(BE-022)***, aquatic life uses are fully supported based on macroinvertebrate community data.

Natural Swimming Areas

FACILITY NAME / ***RECEIVING STREAM***	***PERMIT #*** / ***STATUS***
PARIS MOUNTAIN STATE PARK MOUNTAIN CREEK TRIBUTARY	23-N05 ACTIVE

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-061	GB	SAPROLITE	MAULDIN-SHALLOW
AMB-078	GB	PIEDMONT BEDROCK	MAULDIN-DEEP

NPDES Program

Active NPDES Facilities

RECEIVING STREAM / ***FACILITY NAME*** / ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** / ***TYPE*** / ***COMMENT***
ENOREE RIVER CITY OF WOODRUFF PIPE #: 001 FLOW: 0.7	SC0045802 MINOR DOMESTIC
ENOREE RIVER POLYTECH INC. PIPE #: 001 FLOW: M/R	SCG250062 MINOR INDUSTRIAL

ENOREE RIVER CELANESE LTD/ENOREE PLANT PIPE #: 002 FLOW: 0.148	SC0038229 MAJOR INDUSTRIAL
ENOREE RIVER INMAN MILLS/RAMEY PLANT PIPE #: 001 FLOW: 0.014 PIPE #: 002 FLOW: 0.0176	SC0002496 MINOR INDUSTRIAL
ENOREE RIVER WCRSA/TAYLORS AREA PLANT PIPE #: 001 FLOW: 7.5	SC0024309 MAJOR DOMESTIC TO BE ELIMINATED
ENOREE RIVER WCRSA/PELHAM PLANT WWTP PIPE #: 001 FLOW: 7.5 (EXPANDING TO 22.5MGD)	SC0033804 MAJOR DOMESTIC SCHEDULED FOR EXPANSION
ENOREE RIVER WCRSA/GILDER CREEK PIPE #: 001 FLOW: 8.0 (12.0 (PERMITED)	SC0040525 MAJOR DOMESTIC
ENOREE RIVER TRIBUTARY BUCK-A-ROO RANCH INC. PIPE #: 001 FLOW: 0.01	SC0026662 MINOR DOMESTIC
PRINCESS CREEK CLIFFSTAR CORP./GREER PIPE #: 001 FLOW: M/R	SCG250047 MINOR INDUSTRIAL
PRINCESS CREEK EXIDE TECHNOLOGIES/GREER PIPE #: 001 FLOW: 0.072	SC0042633 MINOR INDUSTRIAL
PRINCESS CREEK TEXTRON INC./GREER GROUNDWATER TRT. SYS. PIPE #: 001 FLOW: 0.05	SC0047988 MINOR INDUSTRIAL
PRINCESS CREEK CC COMPANY/BRUSHY CREEK MINE PIPE #: 001 FLOW: M/R	SCG730572 MINOR INDUSTRIAL
BRUSHY CREEK RCB LIBERTY INSURANCE CO. PIPE #: 001 FLOW: 0.03	SCG250166 MINOR INDUSTRIAL
ROCKY CREEK TRIBUTARY GE/GREENVILLE GAS TURBINE PLT PIPE #: 001 FLOW: 0.15	SC0003484 MINOR INDUSTRIAL
VINE CREEK HANSON AGGREGATES/PELHAM QUARRY PIPE #: 001 FLOW: M/R	SCG730042 MINOR INDUSTRIAL
DURBIN CREEK WCRSA/DURBIN CREEK PLT PIPE #: 001 FLOW: 3.3	SC0040002 MAJOR DOMESTIC

DURBIN CREEK PARA-CHEM SOUTHERN, INC. PIPE #: 001 FLOW: 0.09	SCG250117 MINOR INDUSTRIAL
DURBIN CREEK TRIBUTARY PARA-CHEM SOUTHERN, INC. PIPE #: 001 FLOW: M/R	SC0047589 MINOR INDUSTRIAL
LITTLE ROCKY CREEK BROCKMAN CATFISH FARM PIPE #: 001-003 FLOW: 0.1	SCG130007 MINOR INDUSTRIAL
ENOREE RIVER STRANGE BROTHERS GRADING/TAYLORS PIPE #: 001 FLOW: M/R	SCG730689 MINOR INDUSTRIAL
ABNER CREEK TRIBUTARY NEVOWN INC. PIPE #: 001 FLOW: M/R	SCG250193 MINOR INDUSTRIAL
ENOREE RIVER RAY BROWN/BROWN SAND MINE #2 PIPE #: 001 FLOW: M/R	SCG730323 MINOR INDUSTRIAL
ENOREE RIVER CAROLINA VERMICULITE/HARRISON PIPE #: 001 FLOW: M/R	SCG730368 MINOR INDUSTRIAL
ENOREE RIVER PALMETTO GRADING & DRAINAGE PIPE #: 001 FLOW: M/R	SCG730980 MINOR INDUSTRIAL
ENOREE RIVER TRIBUTARY RAY BROWN/BROWNS DIRT MINE PIPE #: 001 FLOW: M/R	SCG730544 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
ENOREE SANITARY LANDFILL DOMESTIC	231001-1101 ACTIVE
ENOREE C/D LANDFILL DOMESTIC	231001-1201 ACTIVE
R. FALCON LANDFILL C&D	302900-1301 INACTIVE
GENERAL ELECTRIC C&D	233321-1901 ACTIVE

GENERAL ELECTRIC INDUSTRIAL	233321-1201 INACTIVE
GENERAL ELECTRIC INDUSTRIAL	---------- INACTIVE
STEELE HEDDLE INDUSTRIAL	---------- INACTIVE
BAHAN MACHINE & FOUNDRY CO., INC. INDUSTRIAL	---------- INACTIVE
WCA SHILOH C&D CONSTRUCTION	232644-1201 ACTIVE
STRANGE BROTHERS C&D CONSTRUCTION	232457-1701 INACTIVE
MANIOS SHORT TERM C&D LANDFILL CONSTRUCTION	232904-1301 CLOSED
TROTTER LC&D LANDFILL CONSTRUCTION	232455-1701 ACTIVE
SR MULCH & GRINDING YARD WASTE	232739-3001 ACTIVE
GREER GAS LANDFILL LC&D	422900-1302 INACTIVE
HOLSTON GROUP, INC. USED OIL	232435-7101 ACTIVE
VOLPAK INDUSTRIAL SERVICES INDUSTRIAL	233730-2001 ACTIVE
VOLPAK INDUSTRIAL SERVICES USED OIL	233730-7101 ACTIVE
GREENVILLE COUNTY MULCHING LC&D	231001-3001 ACTIVE
HR GARRETT, INC. LC&D	302457-1705 ACTIVE
CITY OF WOODRUFF C&D	421002-1701 ACTIVE

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
HANSON AGGREGATES SE, INC. PELHAM STONE MINE	0431-83 GRANITE

RAY BROWN ENTERPRISES COGDILL & LAWSON MINE	0875-83 SAND (RIVER DREDGE)
RAY BROWN ENTERPRISES BROWN SAND MINE #2	0861-59 SAND
STRANGE BROTHERS GRADING TAYLORS SAND	0992-45 SAND; RIVER GRAVEL
CC COMPANY INC. BRUSHY CREEK & SUBER ROAD MINE	1550-45 SAND
CAROLINA VERMICULITE HARRISON	1341-83 VERMICULITE
RAY BROWN ENTERPRISES BROWNS DIRT MINE	1307-83 SAND; SAND/CLAY

Growth Potential

There is a high potential for residential, commercial, and industrial growth in this watershed, which contains the eastern portion of the greater Greenville area, a portion of the City of Greer, and the Cities of Travelers Rest, Mauldin, Fountain Inn, Simpsonville, and Woodruff. The expansion of the Greenville-Spartanburg Airport and highway improvements around the airport and connecting Greenville to the City of Greer and on to the City of Spartanburg will stimulate continued industrial growth between S.C. Hwy. 101, S.C. Hwy. 417, the Enoree River, and S.C. Hwy. 14. Future industrial development will be prevalent along I-385. The City of Woodruff should also experience industrial, commercial, and residential growth. The area to the north of the City of Greenville is effectively excluded from development by residing in the Paris Mountain State Park.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in the upper section of the **Enoree River** at water quality monitoring sites ***BE-001, BE-015, BE-017, BE-018, B-037***, and **BE-024**. This urbanized section of the river has several NPDES dischargers that are permitted to discharge fecal coliform bacteria. The watershed upstream of BE-017 is within several Municipal Separate Storm Sewer System (MS4) designated areas: Greenville County, City of Greenville, City of Simpsonville, City of Mauldin, City of Greer, Spartanburg County, City of Travelers Rest, and Laurens County. Possible sources of fecal coliform bacteria in this section of the Enoree River include MS4 runoff, leaking sewers, failing onsite wastewater disposal systems, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into the Enoree River of 72% (BE-001), 69% (BE-015), 81% (BE-017), 72% (BE-018), 68% (B-037), and 24% (BE-024) in order for the river to meet the recreational use standard.

A TMDL for fecal coliform was developed in 1999 for **Brushy Creek**, a tributary of the Enoree River, which flows through the City of Greenville. Levels of fecal coliform bacteria can be elevated in water bodies as the result of both point and nonpoint sources of pollution. Between 1991 and 1995, 95% of the samples collected at station ***BE-035*** and 70% of samples collected at station ***BE-009*** exceeded the 400 colonies/100ml standard. Targeting urban land for reduction of bacteria is the most effective strategy for this watershed. A target level of bacteria of 175 colonies/100ml was established. This translates to an urban bacteria-loading reduction of 73% at BE-009 and an urban bacteria-loading reduction of 89% at BE-035. There are several tools available for implementing this TMDL, including NPS pollution outreach activities and materials and coverage under Greenville County's stormwater permit. SCDHEC will continue to monitor water quality in Brushy Creek to evaluate the effectiveness of these measures.

A TMDL was developed by SCDHEC and approved by EPA for pH in **Durbin Creek** at water quality monitoring site ***B-097***. Insufficient data is available to determine the causes of this impairment of the pH standard in Durbin Creek. There is one facility discharging to an unnamed tributary of Durbin Creek; it has had no violations of the pH limits in its NPDES permit during its 9.5 years of compliance history. The Durbin Creek watershed has one Phase 1 MS4 – Greenville County and two small Phase 2 MS4s – Simpsonville and Fountain Inn. The pH target for the TMDL is 6 – 8.5 standard pH units. No reduction in pH (which is a concentration and not a load) is specified.

TMDLs were also developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Durbin Creek** at water quality monitoring sites ***B-035*** and ***B-097***. WCRSA's Durbin Creek WWTP discharges into Durbin Creek downstream of B-097. The watershed is partly within three MS4 designated areas: Greenville County, City of Simpsonville, and City of Fountain Inn. Possible sources of fecal coliform bacteria into the creek include MS4 runoff, leaking sewers, failing onsite wastewater disposal systems, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Durbin Creek of 66% (B-035) and 67% (B-097) in order for the creek to meet the recreational use standard.

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Gilder Creek** at water quality monitoring sites ***BE-040, B-241***, and ***BE-020***. WCRSA's Gilder Creek WWTP does not discharge into Gilder Creek but into directly the Enoree River. The watershed is partly within three MS4 designated areas: Greenville County, City of Mauldin, and City of Simpsonville. Possible sources of fecal coliform bacteria in Gilder Creek include MS4 runoff, leaking sewers, failing onsite wastewater disposal systems, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Gilder Creek of 78% (BE-040), 69% (B-241), and 65% (BE-020) in order for the creek to meet the recreational use standard.

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Mountain Creek** at water quality monitoring site ***B-186***. A minor WWTP for the Altamont Forest Subdivision (SC0034398) discharges into the headwater of Mountain Creek. The entire watershed is with in a MS4 designated area: Greenville County. Possible sources of fecal coliform bacteria in

Mountain Creek include MS4 runoff, leaking sewers, failing onsite wastewater disposal systems, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Mountain Creek of 75% in order for the creek to meet the recreational use standard.

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Rocky Creek** at water quality monitoring site ***BE-007***. No currently active facilities that have fecal coliform limits in their NPDES permits discharge into the creek. The entire watershed is with in two MS4 designated areas: City of Greenville and Greenville County. Possible sources of fecal coliform bacteria in Rocky Creek include MS4 runoff, leaking sewers, failing onsite wastewater disposal systems, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Rocky Creek of 81% in order for the creek to meet the recreational use standard.

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Princess Creek** at water quality monitoring site ***B-192***. No currently active facilities that have fecal coliform limits in their NPDES permits discharge into the creek. The entire watershed is with in two MS4 designated areas: Greenville County and the City of Greer. Possible sources of fecal coliform bacteria in Princess Creek include MS4 runoff, leaking sewers, failing onsite wastewater disposal systems, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Princess Creek of 60% in order for the creek to meet the recreational use standard.

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Beaverdam Creek** at water quality monitoring site ***BE-039***. No currently active facilities that have fecal coliform limits in their NPDES permits discharge into the creek. The entire watershed is with in a MS4 designated area: Greenville County. Possible sources of fecal coliform bacteria in Beaverdam Creek include MS4 runoff, leaking sewers, failing onsite wastewater disposal systems, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Beaverdam Creek of 79% in order for the creek to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

Special Projects

TMDL Implementation for the Enoree River Basin

Twenty-three water quality monitoring stations in the Enoree River basin have been placed on the South Carolina §303(d) list of impaired waters for violations of the fecal coliform bacteria standard. The 730 square mile basin is composed of mostly forest (70%) with some pastureland (10%) and cropland (10%). The basin has several municipalities that have or may receive Municipal Separate Storm Sewer System (MS4) permits. There are 10 active continuous point sources discharging fecal coliform bacteria in the Enoree River basin of South Carolina. The Project addresses several strategies for TMDL implementation through the development and promotion of measures focused at reducing fecal coliform contamination from non-point sources. Clemson

University has partnered with the Natural Resource Conservation Service, Soil and Water Conservation District and Cattlemen's Association of five counties to implement a fecal coliform TMDL for the Enoree River. This three-year project seeks to reduce the amount of fecal coliform bacteria at ten DHEC water quality monitoring stations so that water quality standards will be met. Clemson is leading the effort by educating property owners on proper septic system maintenance as well as best management practices to reduce bacteria coming from agricultural areas. They have also hosted River Sweeps and educational programs for school-aged children across the watershed. In addition to these educational efforts, project staff are recruiting landowners to install best management practices on farms and to repair failing septic systems within the watershed. It is anticipated that the behavior changes resulting from this project's educational efforts, combined with the best management practices throughout the watershed will reduce the fecal coliform loading to the Enoree River as called for by the TMDL.

03050108-02

(Enoree River)

General Description

Watershed 03050108-02 (formerly 03050108-020, 030) is located in Spartanburg, Laurens, and Union Counties and consists primarily of the ***Enoree River*** and its tributaries from Beaverdam Creek to Duncan Creek. The watershed occupies 118,681 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 61.6% forested land, 25.7% agricultural land, 5.8% urban land, 3.4% forested wetland, 1.8% barren land, 1.1% scrub/shrub land, and 0.6% water.

This segment of the Enoree River accepts drainage from its upstream reach, together with Beaverdam Creek (Wallace Branch), Twomile Creek (Hannah Creek), Buckhead Creek, Warrior Creek (Double Branch, Strouds Branch), Enoree Creek, and Cedar Shoals Creek. Elishas Creek enters the river next followed by Frenchman Creek, Johns Creek (Wildcat Branch), Sispring Branch, and Hills Creek. The lower portion of the watershed resides within the Sumter National Forest. There are a total of 248.6 stream miles and 408.9 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
B-246	W/BIO/INT	FW	BEAVERDAM CREEK AT S-30-97, 7 MI NE OF GRAY COURT
B-041	P/W	FW	ENOREE RIVER AT SC 49, SE OF WOODRUFF
B-150	W/INT	FW	WARRIOR CREEK AT US 221, 8 MI NNE OF LAURENS
B-742	BIO	FW	WARRIOR CREEK AT SC 49
B-785	BIO	FW	CEDAR SHOALS CK AT UNNAMED RD 0.2 KM ABOVE CONFL.W/ENOREE R.
B-053	W/INT	FW	ENOREE RIVER AT SC 72, 121, & US 176, 1 MI NE WHITMIRE
RS-03495	RS03	FW	ENOREE RIVER AT SC 72, 121, & US 176, 1 MI NE WHITMIRE

Beaverdam Creek (B-246) – Aquatic life uses are not supported based on macroinvertebrate community data and occurrences of copper in excess of the aquatic life chronic criterion. There is also a significant increasing trend in five-day biochemical oxygen demand. A significant decreasing trend in total nitrogen concentration suggests improving conditions for this parameter. Recreational uses are not supported due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Enoree River - There are two SCDHEC monitoring stations along this section of the Enoree River. At the furthest upstream site ***(B-041)***, aquatic life uses are fully supported. Significant decreasing trends in turbidity, total nitrogen concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions. At the downstream site ***(B-053/RS-03495)***, aquatic life is not supported due to occurrences of copper in excess of the aquatic life chronic criterion. A significant increasing trend in

dissolved oxygen concentration suggests improving conditions for this parameter. A very high concentration of cadmium was measured in the 2003 sediment sample. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions.

Warrior Creek - There are two SCDHEC monitoring stations along Warrior Creek. At the furthest upstream site ***(B-150)***, aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. At the downstream site ***(B-742)***, aquatic life is fully supported based on macroinvertebrate community data.

Cedar Shoals Creek (B-785) – Aquatic life is fully supported based on macroinvertebrate community data.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME*** ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** ***TYPE*** ***COMMENT***
ENOREE RIVER RIVERDALE MILLS W&S DISTRICT PIPE #: 001 FLOW: 0.09	SC0035734 MINOR DOMESTIC
ENOREE RIVER TOWN OF WHITMIRE WTP PIPE #: 001 FLOW: M/R	SCG645046 MINOR DOMESTIC
ENOREE CREEK CAROLINA VERMICULITE/SUMMER PIPE #: 001 FLOW: M/R	SCG730013 MINOR INDUSTRIAL
DOUBLE BRANCH WR GRACE CO./DAVIS DEWITT MINE PIPE #: 001 FLOW: M/R	SCG730093 MINOR INDUSTRIAL
BUCKHEAD CREEK WR GRACE CO./WRIGHT #1 & #2 MINES PIPE #: 001 FLOW: M/R	SCG730097 MINOR INDUSTRIAL
ENOREE RIVER TRIBUTARY WR GRACE CO./TEMPLETON MINE PIPE #: 001 FLOW: M/R	SCG730223 MINOR INDUSTRIAL
CEDAR SHOALS CREEK WR GRACE CO./GIDEON MINE PIPE #: 001 FLOW: M/R	SCG730111 MINOR INDUSTRIAL
ENOREE RIVER TRIBUTARY WR GRACE CO./BOYD WHITMORE MINE PIPE #: 001 FLOW: M/R	SCG730088 MINOR INDUSTRIAL

ENOREE RIVER TRIBUTARY PATTERSON VERMICULITE MINE PIPE #: 001 FLOW: M/R	SCG730463 MINOR INDUSTRIAL
ENOREE RIVER TRIBUTARY CAROLINA VERMICULITE/DONNA1 MINE PIPE #: 001 FLOW: M/R	SCG730256 MINOR INDUSTRIAL
ELISHAS CREEK CAROLINA VERMICULITE/LAURENCE MINE PIPE #: 001 FLOW: M/R	SCG730147 MINOR INDUSTRIAL
WARRIOR CREEK WR GRACE CO./ENOREE SITE PIPE #: 002 FLOW: 0.012 PIPE #: 003 FLOW: M/R	SC0045811 MINOR INDUSTRIAL
BEAVERDAM CREEK CAROLINA VERMICULITE/WALDREP PIPE #: 001 FLOW: M/R	SCG730071 MINOR INDUSTRIAL
BEAVERDAM CREEK VULCAN MATERIALS CO./GRAY COURT PIPE #: 001 FLOW: M/R	SCG730055 MINOR INDUSTRIAL
ENOREE RIVER DORCHESTER DIRT CO./ARROWHEAD PIPE #: 001 FLOW: M/R	SCG731025 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
UNION COUNTY REGIONAL MSWLF MUNICIPAL	422441-1101 ACTIVE
HIGHWAY 92 C&D C&D	PROPOSED ----------
NATIONAL STARCH INDUSTRIAL	423344-1601, 422433-1601 CLOSED
HR GARRETT, INC. C&D	302499-1701 INACTIVE
SOUTHEASTERN ASSOCIATES - LAURENS INDUSTRIAL	302428-1201 INACTIVE

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
CAROLINA VERMICULITE NUMBER 8 MINE	1034-59 VERMICULITE
CAROLINA VERMICULITE BROWN #2 MINE	0623-83 VERMICULITE
CAROLINA VERMICULITE SUMNER MINE #1	0754-83 VERMICULITE
WR GRACE & CO. BOYD-WHITMORE MINE	1118-59 VERMICULITE ORE
CAROLINA VERMICULITE DONNAN #1 MINE	1164-59 VERMICULITE
PATTERSON VERMICULITE CO. PATTERSON #3 MINE	0048-59 VERMICULITE
WR GRACE & CO. GIDEON MINE	0833-83 VERMICULITE
RAY BROWN ENTERPRIZES WILLIAMS SAND PIT	1373-59 SAND
CAROLINA VERMICULITE LAURENCE MINE	1048-87 VERMICULITE ORE
CAROLINA VERMICULITE CHARLES WALDREP	0970-59 VERMICULITE
VULCAN CONSTRUCTION MATERIALS LP GRAY COURT QUARRY	0061-59 GRANITE
WR GRACE & CO. WRIGHT NO. 1 & 2	0278-59 VERMICULITE
WR GRACE & CO. TEMPLETON MINE	1160-59 VERMICULITE
WR GRACE & CO. DAVIS-DEWITT MINE	1018-59 VERMICULITE ORE

Water Quantity

WATER USER *STREAM*	*REGULATED CAPACITY (MGD)* *PUMPING CAPACITY (MGD)*
CITY OF CLINTON ENOREE RIVER	6.0 10.4
TOWN OF WHITMIRE ENOREE RIVER	1.0 2.2

Growth Potential

There is a low potential for growth in this watershed, which contains the Towns of Enoree and Gray Court. The watershed is bisected by I-26 and I-385 and some growth may be expected around the interstate interchanges. Growth may also be associated with industrial development along U.S. Hwy. 221. A commercial corridor has developed along U.S. Hwy. 176 and S.C. Hwy. 72 located in the lower region of the watershed, which serves the Whitmire community. Public water is available, but little growth is expected.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in the middle section of the **Enoree River** at water quality monitoring sites ***B-041*** and ***B-053***. The upstream half of this section of has a number of mines; the lower half is in the Sumter National Forest. This section of the river has one NPDES discharger, Riverdale Mills Water & Sewer District (SC0035734), which is permitted to discharge fecal coliform bacteria. The Enoree in this reach is not within a Municipal Separate Storm Sewer System (MS4) designated area. Possible sources of fecal coliform bacteria in this section of the Enoree River include upstream sources, leaking sewers, failing onsite wastewater disposal systems, cattle in creeks, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into the Enoree River of 36% (B-041) and 29% (B-053) in order for the river to meet the recreational use standard.

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Beaverdam Creek** at water quality monitoring site **B-246**. There are no facilities that have fecal coliform limits in their NPDES permits that discharge in to the creek. The watershed is not within a MS4 designated area. Possible sources of fecal coliform bacteria in Beaverdam Creek include failing onsite wastewater disposal systems, cattle in the creeks, urban residential runoff, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Beaverdam Creek of 31% in order for the creek to meet the recreational use standard.

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Warrior Creek** at water quality monitoring site ***B-150***. There are no facilities that have fecal coliform limits in their NPDES permits that discharge in to the creek. The watershed is not within a MS4 designated area. Possible sources of fecal coliform bacteria in Warrior Creek include failing onsite wastewater disposal systems, cattle in the creeks, urban residential runoff, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Warrior Creek of 67% in order for the creek to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

Special Projects

TMDL Implementation for the Enoree River Basin

Twenty-three water quality monitoring stations in the Enoree River basin have been placed on the South Carolina §303(d) list of impaired waters for violations of the fecal coliform bacteria standard. The 730 square mile basin is composed of mostly forest (70%) with some pastureland (10%) and cropland (10%). The basin has several municipalities that have or may receive Municipal Separate Storm Sewer System (MS4) permits. There are 10 active continuous point sources discharging fecal coliform bacteria in the Enoree River basin of South Carolina. The Project addresses several strategies for TMDL implementation through the development and promotion of measures focused at reducing fecal coliform contamination from non-point sources. Clemson University has partnered with the Natural Resource Conservation Service, the Soil and Water Conservation District and the Cattlemen's Association of five counties to implement a fecal coliform TMDL for the Enoree River. This three-year project seeks to reduce the amount of fecal coliform bacteria at ten DHEC water quality monitoring stations so that water quality standards will be met. Clemson is leading the effort by educating property owners on proper septic system maintenance as well as best management practices to reduce bacteria coming from agricultural areas. They have also hosted River Sweeps and educational programs for school-aged children across the watershed. In addition to these educational efforts, project staff are recruiting landowners to install best management practices on farms and to repair failing septic systems within the watershed. It is anticipated that the behavior changes resulting from this project's educational efforts, combined with the best management practices throughout the watershed will reduce the fecal coliform loading to the Enoree River as called for by the TMDL.

03050108-03

(Duncan Creek)

General Description

Watershed 03050108-03 (formerly 03050108-040) is located in Laurens and Newberry Counties and consists primarily of ***Duncan Creek*** and its tributaries. The watershed occupies 76,741 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 66.2% forested land, 18.5% agricultural land, 9.5% urban land, 3.4% forested wetland,1.3% barren land, 0.7% scrub/shrub land, and 0.4% water.

Duncan Creek originates near the Town of Ora and accepts drainage from Duncan Creek Reservoir 6B, Long Branch, Saxton Branch, Beards Fork Creek, Millers Fork (Sand Creek), and Allisons Branch. Beards Fork Creek and Millers Fork enter Duncan Creek near the City of Clinton. Further downstream near the Town of Whitmire, South Fork Duncan Creek (Ned Wesson Branch) enters Duncan Creek followed by Mulberry Branch and Sandy Branch. The lower portion of the watershed resides within the Sumter National Forest. There are a total of 142.3 stream miles and 231.4 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
B-735	W	FW	DUNCAN CREEK RESERVOIR 6B
B-231	S/W	FW	BEARDS FORK CREEK AT US 276 (I-385), 3.7 MI NNE OF CLINTON
RS-01057	RS01/BIO	FW	DUNCAN CREEK AT COUNTY RD 26, 4.5 MI NE OF CLINTON
B-072	P/BIO/INT	FW	DUNCAN CREEK AT US 176, 1.5 MI SE OF WHITMIRE

Duncan Creek Reservoir 6B (B-735) – Aquatic life and recreational uses are fully supported.

Beards Fork Creek (B-231) - Aquatic life uses are partially supported due to dissolved oxygen excursions. There is a significant decreasing trend in pH. Recreational uses are not supported due to fecal coliform bacteria excursions.

Duncan Creek – There are two SCDHEC monitoring stations along Duncan Creek. At the upstream site ***(RS-01057)***, aquatic life uses are fully supported based on macroinvertebrate community data. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. At the downstream site ***(B-072)***, aquatic life uses are fully supported based on macroinvertebrate community data. Significant increasing trends in dissolved oxygen concentration and decreasing trends in turbidity suggest improving conditions for these parameters. There is a significant increasing trend in pH. Recreational uses are not supported at this site due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-067	GB	PIEDMONT BEDROCK	WHITMIRE

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
DUNCAN CREEK TOWN OF WHITMIRE PIPE #: 001 FLOW: 1.0	SC0022390 MINOR DOMESTIC
DUNCAN CREEK WR GRACE/BALL MINE PIPE #: 001 FLOW: M/R	SCG730029 MINOR INDUSTRIAL
DUNCAN CREEK WR GRACE/GOODWIN MINE PIPE #: 001 FLOW: M/R	SCG730110 MINOR INDUSTRIAL
DUNCAN CREEK TRIBUTARY WR GRACE/#1 #2A MINES PIPE #: 001 FLOW: M/R	SCG730094 MINOR INDUSTRIAL
BEARDS FORK CREEK WR GRACE/LEONARD MINE PIPE #: 001 FLOW: M/R	SCG730106 MINOR INDUSTRIAL
BEARDS FORK CREEK TRIBUTARY STANDARD PLYWOOD INC. PIPE #: 001 FLOW: M/R	SCG250192 MINOR INDUSTRIAL
LONG BRANCH WR GRACE/ROY #2 MINE PIPE #: 001 FLOW: M/R	SCG730441 MINOR INDUSTRIAL
LONG BRANCH TRIBUTARY CAROLINA VERMICULITE/WINGO MINE PIPE #: 001 FLOW: M/R	SCG730413 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME *FACILITY TYPE*	*PERMIT #* *STATUS*
CLINTON MILLS - BAILEY PT DOMESTIC	DWP-019 (SCD0033415575) CLOSED
CITY OF CLINTON DOMESTIC	301002-1201 ACTIVE

CITY OF CLINTON	----------
DOMESTIC	CLOSED
CITY OF CLINTON	301002-3001
COMPOSTING	INACTIVE
LAURENS COUNTY SW TRANSFER STA.	302323-6001
DOMESTIC	ACTIVE
LAWNDALE MOBILE HOMES	IWP-101
INDUSTRIAL	INACTIVE
TORRINGTON CO.	-------
INDUSTRIAL	INACTIVE
TORRINGTON CO. COMPOSTING FACILITY	303300-3001
COMPOSTING	INACTIVE
SOUTHEASTERN SOIL RECOVERY	302715-8001
INDUSTRIAL	INACTIVE
COUNTY FRESH LA	232736-8001
PRODUCE	ACTIVE

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
CAROLINA VERMICULITE	1419-59
WINGO	VERMICULITE
WR GRACE & CO.	1312-59
ROY #2 MINE	VERMICULITE
WR GRACE & CO.	0692-59
GOODWIN MINE	VERMICULITE
WR GRACE & CO.	0748-59
BALL MINE	VERMICULITE
HANSON AGGREGATES SE, INC.	1414-59
CLINTON QUARRY	GRANITE
WR GRACE & CO.	1064-59
COOPER #1 & #2	VERMICULITE ORE

Water Quantity

WATER USER ***STREAM***	***REGULATED CAPACITY (MGD)*** ***PUMPING CAPACITY (MGD)***
CITY OF CLINTON	3.5
DUNCAN CREEK	1.7
TOWN OF WHITMIRE	1.0
DUNCAN CREEK	1.0

Growth Potential

There is a high potential for industrial growth in this watershed, which contains the City of Clinton and portions of the Cities of Whitmire and Laurens. I-26 and I-385 intersect near Clinton and future industrial development will be prevalent along I-385 to the area south of Clinton. There is a potential for growth in the northern portion of Newberry County centering on Whitmire and environs.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Duncan Creek** and **Beards Fork Creek** at water quality monitoring sites ***B-072*** and ***B-231***. The Town of Whitmire's WWTP is on Duncan Creek just upstream of B-072. The watershed is not within a Municipal Separate Storm Sewer System (MS4) designated area. Possible sources of fecal coliform bacteria in Duncan Creek include failing onsite wastewater disposal systems, cattle in the creeks, leaking sewers, urban residential runoff, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Duncan Creek of 67 % and into Beards Fork of 47 % in order for the creeks to meet the recreational use standard.

Special Projects

TMDL Implementation for the Enoree River Basin

Twenty-three water quality monitoring stations in the Enoree River basin have been placed on the South Carolina §303(d) list of impaired waters for violations of the fecal coliform bacteria standard. The 730 square mile basin is composed of mostly forest (70%) with some pastureland (10%) and cropland (10%). The basin has several municipalities that have or may receive Municipal Separate Storm Sewer System (MS4) permits. There are 10 active continuous point sources discharging fecal coliform bacteria in the Enoree River basin of South Carolina. The Project addresses several strategies for TMDL implementation through the development and promotion of measures focused at reducing fecal coliform contamination from non-point sources. Clemson University has partnered with the Natural Resource Conservation Service, the Soil and Water Conservation District and the Cattlemen's Association of five counties to implement a fecal coliform TMDL for the Enoree River. This three-year project seeks to reduce the amount of fecal coliform bacteria at ten DHEC water quality monitoring stations so that water quality standards will be met. Clemson is leading the effort by educating property owners on proper septic system maintenance as well as best management practices to reduce bacteria coming from agricultural areas. They have also hosted River Sweeps and educational programs. In addition, project staff are recruiting landowners to install BMPs on farms and to repair failing septic systems within the watershed. It is anticipated that the behavior changes resulting from this project's educational efforts, combined with the best management practices throughout the watershed will reduce the fecal coliform loading to the Enoree River as called for by the TMDL.

03050108-04

(Indian Creek)

General Description

Watershed 03050108-04 (formerly the Indian Creek portion of 03050108-050) is located in Newberry and Laurens Counties and consists primarily of ***Indian Creek*** and its tributaries. The watershed occupies 61,981 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 76.0% forested land, 12.0% agricultural land, 5.5% urban land, 4.5% forested wetland, 1.3% barren land, 0.5% scrub/shrub land, and 0.2% water.

Indian Creek originates near the Town of Joanna and accepts drainage from Fort Branch, Loftons Branch, Locust Branch, Long Branch (Buncombe Branch), Headleys Creek (Peges Creek), Pattersons Creek, Asias Branch, Gilders Creek (Johns Mountain Branch, Joshuas Branch), and Hunting Creek. There are a total of 113.4 stream miles and 37.0 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

No water quality monitoring occurred in this watershed.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM / ***FACILITY NAME*** / ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** / ***TYPE*** / ***COMMENT***
INDIAN CREEK QUALITY STONE INC./JOANNA QUARRY PIPE #: 001 FLOW: M/R	SCG730379 MINOR INDUSTRIAL

Nonpoint Source Management Program

Mining Activities

MINING COMPANY / ***MINE NAME***	***PERMIT #*** / ***MINERAL***
QUALITY STONE INC. JOANNA QUARRY	1380-59 GRANITE

Growth Potential

There is a low potential for growth in this watershed, which contains the Town of Joanna. The watershed is effectively excluded from development by residing in the Sumter National Forest.

03050108-05

(Enoree River)

General Description

Watershed 03050108-05 (formerly the Enoree River portion of 03050108-050) is located in Newberry and Laurens Counties and consists primarily of the ***Enoree River*** and its tributaries from Duncan Creek to its confluence with the Broad River. The watershed occupies 43,303 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 78.7% forested land, 8.5% agricultural land, 6.9% forested wetland, 4.6% urban land, 0.6% scrub/shrub land, 0.4% barren land, and 0.3% water.

This segment of the Enoree River accepts drainage from its upstream reaches, together with Sulphur Spring Branch, Collins Branch, and the Indian Creek Watershed. South Fork Kings Creek (Little Kings Creek, Means Branch) enters the river near the City of Newberry followed by Fosters Branch, Quarters Branch, and Subers Creek. The entire watershed resides within the Sumter National Forest and the Enoree River Waterfowl Area is located near the confluence with the Broad River. There are a total of 73.6 stream miles and 19.5 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
B-799	BIO	FW	KINGS CREEK AT US 176, DOWNSTREAM OF BRIDGE
B-054	P/INT	FW	ENOREE RIVER AT S-36-45, 3.5 MI ABOVE CONFLUENCE WITH BROAD RIVER

Kings Creek (B-799) - Aquatic life uses are partially supported based on macroinvertebrate community data.

Enoree River (B-054) - Aquatic life uses are partially supported due to occurrences of copper in excess of the aquatic life chronic criterion. Significant increasing trends in dissolved oxygen concentration and decreasing trends in five-day biochemical oxygen demand and total phosphorus concentration suggest improving conditions for these parameters. There is a significant increasing trend in pH. Very high concentrations of cadmium were measured in the 2001-2004 sediment samples. In addition, DDE (a metabolite of DDT) was detected in the 2002 sediment sample and dibutyl phthalate was detected in the 2004 sample. Although the use of DDT was banned in 1973, it is very persistent in the environment. Recreational uses are partially supported due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME *FACILITY TYPE*	*PERMIT #* *STATUS*
SHAKESPEARE LANDFILL - NEWBERRY INDUSTRIAL	IWP-159 INACTIVE

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
CLARK BROTHERS FARM LLC CLARK-ENOREE SAND MINE #1	1540-87 SAND

Growth Potential

There is a low potential for growth in this watershed. The watershed is effectively excluded from development by residing in the Sumter National Forest.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in the **Enoree River** at water quality monitoring site ***B-054***. This section of the Enoree, upstream of its confluence with the Broad River, flows through the Sumter National Forest and has no NPDES dischargers. The watershed is not within a Municipal Separate Storm Sewer System (MS4) designated area. Possible sources of fecal coliform bacteria in this section of the Enoree River include upstream sources, failing onsite wastewater disposal systems, cattle in creeks, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into the Enoree River of 60 % in order for the river to meet the recreational use standard. Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

Special Projects

TMDL Implementation for the Enoree River Basin

Twenty-three water quality monitoring stations in the Enoree River basin have been placed on the South Carolina §303(d) list of impaired waters for violations of the fecal coliform bacteria standard. The 730 square mile basin is composed of mostly forest (70%) with some pastureland (10%) and cropland (10%). The basin has several municipalities that have or may receive Municipal Separate Storm Sewer System (MS4) permits. There are 10 active continuous point sources discharging fecal coliform bacteria in the Enoree River basin of South Carolina. The Project addresses several strategies for TMDL implementation through the development and promotion of measures focused at reducing fecal coliform contamination from non-point sources. Clemson University has partnered with the Natural Resource

Conservation Service, the Soil and Water Conservation District and the Cattlemen's Association of five counties to implement a fecal coliform TMDL for the Enoree River. This three-year project seeks to reduce the amount of fecal coliform bacteria at ten DHEC water quality monitoring stations so that water quality standards will be met. Clemson is leading the effort by educating property owners on proper septic system maintenance as well as best management practices to reduce bacteria coming from agricultural areas. They have also hosted River Sweeps and educational programs for school-aged children across the watershed. In addition to these educational efforts, project staff are recruiting landowners to install best management practices on farms and to repair failing septic systems within the watershed. It is anticipated that the behavior changes resulting from this project's educational efforts, combined with the best management practices throughout the watershed will reduce the fecal coliform loading to the Enoree River as called for by the TMDL.

Tyger River Basin Description

The ***Tyger River Basin (hydrologic unit 03050107)*** is located in Greenville, Spartanburg, and Union Counties, and encompasses 807.9 square miles extending across the Piedmont region of the State. The Tyger River encompasses 6 watersheds and 517,065 acres, of which 55.7% is forested land, 25.7% is agricultural land, 12.9% is urban land, 3.0% is forested wetland, 1.1% is barren land, 0.9% is water, and 0.7% is scrub/shrub land. The urban land percentage is comprised chiefly of the City of Greer and portions of the Cities of Spartanburg and Union. There are approximately 973.4 stream miles and 2,889.2 acres of lake waters in the Tyger River Basin. The Tyger River is formed by the confluence of the South Tyger River, the Middle Tyger River, and the North Tyger River near the City of Woodruff and accepts drainage from Fairforest Creek before flowing into the Broad River.

Physiographic Regions

The USDA Soil Conservation Service divided the State of South Carolina into six Major Land Resource Areas (MLRAs). The MLRAs are physiographic regions that have soils, climate, water resources, and land uses in common. The physiographic region that defines the Tyger River Basin is as follows:

The **Piedmont** is an area of gently rolling to hilly slopes with narrow stream valleys dominated by forests, farms, and orchards; elevations range from 375 to 1,000 feet.

Land Use/Land Cover

General land use/land cover mapping for South Carolina was derived from the U.S. Geological Survey's National Land Cover Data (NLCD), based on nationwide Landsat Thematic Mapper (TM) multispectral satellite images (furnished through the Multi-Resolution Land Characteristics (MRLC) consortium, coordinated by USEPA) using image analysis software to inventory the Nation's land classes. The NLCD are developed by the USGS (EROS Data Center) using TM image interpretation, air photo interpretation, National Wetland Inventory data analysis, and ancillary data analysis.

Urban land is characterized by man-made structures and artificial surfaces related to industrial, commercial, and residential uses, as well as vegetated portions of urban areas.

Agricultural/Grass land is characterized by cropland, pasture, and orchards and may include some grass cover in urban, scrub/shrub, and forest areas.

Scrub/Shrub land is adapted from the western Rangeland classification to represent the "fallow" condition of the land (currently unused, yet vegetated), and is most commonly found in the dry Sandhills region including areas of farmland, sparse pines, regenerating forest lands, and recently harvested timber lands.

Forest land is characterized by deciduous and evergreen trees not including forests in wetland settings.

Forested Wetland (swampland) is the saturated bottomland, mostly hardwood forests that are primarily composed of wooded swamps occupying river floodplains and isolated low-lying wet areas, primarily located in the Coastal Plain.

Nonforested Wetland (marshland) is dependent on soil moisture to distinguish it from scrub/shrub since both classes contain grasses and low herbaceous cover; nonforested wetlands are most common along the coast and isolated freshwater areas found in the Coastal Plain.

Barren land is characterized by an unvegetated condition of the land, both natural (rock, beaches and unvegetated flats) and man-induced (rock quarries, mines, and areas cleared for construction in urban areas or clearcut forest).

Water (non-land) includes both fresh and tidal waters.

Soil Types

The individual soil series for the Tyger River Basin are described as follows.

Cataula soils are deep, gently sloping to strongly sloping, well drained soils with a loamy surface layer and a clayey subsoil.

Cecil soils are deep, well drained, gently sloping to sloping soils that have red subsoil.

Davidson soils are deep, gently sloping to strongly sloping, well drained to somewhat poorly drained soils with a loamy surface layer and a clayey subsoil.

Enon soils are well drained to somewhat poorly drained, shallow to deep soils, mainly brownish, firm to extremely firm clay loam to clay in the subsoil, on narrow and medium ridges.

Madison soils are well drained, moderately sloping soils, with clayey subsoil, moderately deep.

Pacolet soils are well drained, moderately steep soils with clayey subsoil, moderately deep.

Wilkes soils are dominantly strongly sloping to steep, well-drained soils.

Slope and Erodibility

The definition of soil erodibility differs from that of soil erosion. Soil erosion may be more influenced by slope, rainstorm characteristics, cover, and land management than by soil properties. Soil erodibility refers to the properties of the soil itself, which cause it to erode more or less easily than others when all other factors are constant.

The soil erodibility factor, K, is the rate of soil loss per erosion index unit as measured on a unit plot, and represents an average value for a given soil reflecting the combined effects of all the soil properties that significantly influence the ease of soil erosion by rainfall and runoff if not protected. The K values closer to 1.0 represent higher soil erodibility and a greater need for best management practices to minimize erosion and contain those sediments that do erode. The range of K-factor values in the Tyger River Basin is from 0.24 to 0.29.

Climate

Normal yearly rainfall in the Tyger River Basin area during the period of 1971 to 2000 was 49.3 inches, according to South Carolina's **30-year** climatological record. Data compiled from National Weather Service stations in Greenville-Spartanburg WSO Airport, Spartanburg, Union, Woodruff, and Whitmire were used to determine the general climate information for this portion of the State. Annual total rainfall for winter months averaged 13.02 inches; with 12.58, 12.17, and 11.52 inches of precipitation in the spring, summer, and fall, respectively. The average annual daily temperature was 60.0 ^{o}F. Winter temperatures averaged 42.7^{o}F, spring temperatures averaged 59.3 ^{o}F and summer and fall mean temperatures were 77.0 ^{o}F and 60.8 ^{o}F, respectively.

Watershed Evaluations

03050107-01

(Middle Tyger River)

General Description

Watershed 03050107-01 (formerly 03050107-040) is located in Greenville and Spartanburg Counties and consists primarily of the ***Middle Tyger River*** and its tributaries. The watershed occupies 54,596 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 47.2% forested land, 34.0% agricultural land, 13.8% urban land, 2.2% forested wetland, 1.3% water, 0.8% scrub/shrub land, and 0.7% barren land.

The Middle Tyger River accepts drainage from Campbell Creek, Beaverdam Creek (Barnes Creek), and Spencer Creek before flowing into Lyman Lake (Meadow Creek). Downstream of Lyman Lake, another Beaverdam Creek (Foyster Creek, Thompson Branch, Berrys Millpond, Silver Lake) flows into the river followed by Twin Lakes much further downstream. There are a total of 97.6 stream miles and 578.7 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
B-148	P/W	FW	MIDDLE TYGER RIVER AT SC 14, 2 MI SSW GOWANSVILLE
B-784	BIO	FW	BEAVERDAM CREEK AT SC 357
B-012	S/W	FW	MIDDLE TYGER RIVER AT S-42-63
B-014	W/INT	FW	MIDDLE TYGER RIVER AT S-42-64

Middle Tyger River - There are three SCDHEC monitoring stations along the Middle Tyger River. At the upstream site ***(B-148)***, aquatic life uses are fully supported. Significant increasing trends in dissolved oxygen concentration and decreasing trends in turbidity, total phosphorus concentration, and total nitrogen concentration suggest improving conditions for these parameters. There is a significant increasing trend in pH. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. At the midstream site ***(B-012)***, aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. There is a significant decreasing trend in pH. Significant decreasing trends in total phosphorus concentration and fecal coliform bacteria concentration suggest improving conditions for these parameters. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. At the downstream site ***(B-014)***, aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life chronic criterion. There is also a significant increasing trend in five-day biochemical oxygen demand. There is a significant decreasing trend in pH. Significant decreasing trends in total phosphorus concentration and fecal coliform bacteria concentration suggest improving conditions for these parameters. Recreational uses are partially supported at this site due to fecal

coliform bacteria excursions. *Fish tissue samples from the Middle Tyger River indicate no advisories are needed at this time.*

Beaverdam Creek (B-784) – Aquatic life uses are partially supported based on macroinvertebrate community data.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME*** ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** ***TYPE*** ***COMMENT***
MIDDLE TYGER RIVER SPARTAN MILLS/STARTEX MILL PIPE #: 002 FLOW: 0.4	SC0002453 MIN0R INDUSTRIAL
MIDDLE TYGER RIVER SJWD/WTP PIPE #: 001 FLOW: M/R	SCG643003 MINOR DOMESTIC
MIDDLE TYGER RIVER TOWN OF LYMAN WWTP PIPE #: 001 FLOW: 4.5 PIPE #: 001 FLOW: 5.0 (PHASE II) PIPE #: 001 FLOW: 6.0 (PHASE III)	SC0021300 MAJOR DOMESTIC
MIDDLE TYGER RIVER CLARK CONSTRUCTION COMPANY PIPE #: 001 FLOW: M/R	SCG730214 MINOR INDUSTRIAL
BEAVERDAM CREEK TRIBUTARY PLUMLEY CONSTRUCTION/PLUMLEY MINE PIPE #: 001 FLOW: M/R	SCG730521 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Activities

SOLID WASTE LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
BROWN LCD&YT C&D	422474-1701 ACTIVE
VANPORT LCD RECYCLING FACILTY COMPOSTING	232777-3001 ACTIVE

Land Application Sites

LAND APPLICATION SYSTEM *FACILITY NAME*	*ND#* *TYPE*
TILEFIELD BLUE RIDGE HIGH SCHOOL	ND0064629 DOMESTIC

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
CLARK CONSTRUCTION CO. CLARK-TYGER SAND MINE	0886-45 SAND
PLUMLEY CONSTRUCTION CO., INC. PLUMLEY MINE	1340-45 SAND; SAND/CLAY

Water Quantity

WATER USER *STREAM*	*REGULATED CAPACITY (MGD)* *PUMPING CAPACITY (MGD)*
SJWD (STARTEX JACKSON WELLFORD DUNCAN) MIDDLE TYGER RIVER	16.0 30.0

Growth Potential

There is a high potential for growth in this watershed, which contains a portion of the Town of Duncan. The Cities of Greer and Spartanburg are connected via the I-85 corridor, which bisects this watershed. There are also industrial developmental pressures along U.S. Hwy. 29.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

A total maximum daily load (TMDL) for fecal coliform was developed for the **Middle Tyger River** in 1999. Levels of fecal coliform bacteria can be elevated in water bodies as the result of both point and nonpoint sources of pollution. Between 1991 and 1995, 38% of the samples collected at station ***B-148*** exceeded the 400 colonies/100ml standard. Targeting agricultural land for reduction of bacteria is the most effective strategy for this watershed. A target level for fecal coliform bacteria of 175 colonies/100ml was established. This translates to an agricultural bacteria-loading reduction of 68%.

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in the **Middle Tyger River** at water quality monitoring sites ***B-012*** and ***B-014***. Currently The Town of Lyman operates a WWTP that discharges into the river. The Middle Tyger River watershed is within four Municipal Separate Storm Sewer System (MS4) designated areas: City of Duncan, Town of Lyman, Town of Wellford, and Spartanburg County. Possible sources of fecal coliform bacteria into the Middle Tyger River include MS4 runoff, leaking sewers, failing onsite wastewater disposal

systems, pets, and wildlife. The TMDL specifies reductions in the load of fecal coliform bacteria into the Middle Tyger River of 40% (B-012) and of 63% (B-014) in order for the river to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

Special Projects

Tyger River Basin Fecal Coliform TMDL Implementation Project

The Tyger River Basin has been included in the South Carolina's Section 303(d) List for impaired waterbodies for violation of the fecal coliform water quality standard. A TMDL for fecal coliform bacteria was developed for the 25 sampling sites within the watershed. Eleven of these fall within the Municipal Separate Storm Sewer System (MS4) areas. TMDLs for the remaining 15 sites call for reductions ranging from 16% to 82%. The TMDL document indicates that nonpoint sources are the main contributors of fecal coliform bacteria contamination for these sites. Four upstate counties, Soil and Water Conservation Districts, the SJWD Water District, USC Upstate have partnered with Clemson University and several other cooperators to implement the TMDL. Their project addresses several strategies for TMDL implementation through the development and promotion of measures focused at reducing fecal coliform contamination. The goal of the project is to reduce the fecal coliform bacteria load to the Tyger River Basin through agricultural practices, rural residential septic system repairs and urban storm water reductions. This will be done by offering cost share assistance to recruit livestock farmers to develop farm plans and implement BMPs to reduce animal waste from entering the watershed and to recruit homeowners to repair failing septic systems. The project will also educate the public about the potential sources of Fecal Coliform and means of reducing fecal coliform pollution of the watershed.

03050107-02

(North Tyger River)

General Description

Watershed 03050107-02 (formerly 03050107-020, 030) is located in Spartanburg and Union Counties and consists primarily of the ***North Tyger River*** and its tributaries. The watershed occupies 56,172 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 43.7% forested land, 31.2% agricultural land, 18.9% urban land, 2.8% forested wetland, 1.4% barren land, 1.3% water, and 0.7% scrub/shrub land.

Jordan Creek, which was impounded to create Lake Cooley, drains into the North Tyger River along with several unnamed tributaries. Frey Creek (Grays Creek) drains into the river next, followed by Jimmies Creek, Cub Branch, Ranson Creek, Tim Creek (Montgomery Pond), and Stillhouse Branch. Further downstream the river flows through Ott Shoals and accepts drainage from Wards Creek (Tanyard Branch), Tin Roof Branch, Johnson Branch (Big Branch), and Thomas Branch. There are a total of 113.5 stream miles and 248.6 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
B-348	W	FW	LAKE COOLEY IN FOREBAY NEAR DAM
B-219	S/INT/BIO	FW	NORTH TYGER RIVER AT US 29, 7.2 MI W OF SPARTANBURG
B-018A	S/INT	FW	NORTH TYGER RIVER AT S-42-231, 11 MI S OF SPARTANBURG

Lake Cooley (B-348) – Aquatic life and recreational uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration. *Fish tissue samples from Lake Cooley indicate no advisories are needed at this time.*

North Tyger River – There are two SCDHEC monitoring stations along the North Tyger River. At the upstream site ***(B-219)***, aquatic life uses are not supported based on macroinvertebrate community data. There is also a significant decreasing trend in dissolved oxygen concentration. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters. There is a significant increasing trend in pH. Recreational uses are fully supported at this site and a significant decreasing trend in fecal coliform bacteria suggests improving conditions for this parameter. At the downstream site ***(B-018A)***, aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life chronic criterion. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. *Fish tissue samples from the North Tyger River indicate no advisories are needed at this time.*

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
NORTH TYGER RIVER LEIGH FIBERS, INC. PIPE #: 001 FLOW: M/R	SCG250170 MINOR INDUSTRIAL
NORTH TYGER RIVER SSSD/LOWER N. TYGER RIVER WWTP PIPE #: 001 FLOW: 2.5 (PHASE II)	SC0048143 MINOR DOMESTIC
NORTH TYGER RIVER WELLFORD LANDFILL BORROW AREA PIPE #: 001 FLOW: M/R	SCG730519 MINOR INDUSTRIAL
NORTH TYGER RIVER MCMILLAN-CARTER/SPARTANBURG #1 PIPE #: 001 FLOW: M/R	SCG730723 MINOR INDUSTRIAL
FREY CREEK WELLFORD ESTATES TRAILER PARK PIPE #: 001 FLOW: 0.015	SC0030571 MINOR DOMESTIC
LAKE COOLEY VULCAN MATERIALS CO./LYMAN QUARRY PIPE #: 001 FLOW: M/R	SCG730056 MINOR INDUSTRIAL
FREY CREEK TRIBUTARY FAIRFOREST VENTURE/CEDAR CREST PIPE #: 001 FLOW: M/R	SCG730371 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME *FACILITY TYPE*	*PERMIT #* *STATUS*
WELLFORD LANDFILL DOMESTIC	DWP-078 INACTIVE
WELLFORD LANDFILL DOMESTIC	421001-1101 ACTIVE
OLD WELLFORD LANDFILL DOMESTIC	DWP-012 CLOSED
HOWARD GRADING & CONSTR. LCD C&D LANDFILL	422712-1701 ACTIVE
JIMMY WILSON CONSTR. LCD/HUNSINGER SITE C&D	422647-1702 ACTIVE

JIMMY WILSON CONSTR. LCD/DKINNER SITE C&D	422647-1703 ACTIVE
CROFT LANDFILL COMPOSTING	425803-3001, 426600-3001 INACTIVE
WELLFORD LANDFILL COMPOSTING SITE COMPOSTING	421001-3002 ACTIVE
PALMETTO LANDFILL & RECYCLING CENTER COMPOSTING	422401-3001 INACTIVE
WASP NEST ROAD C&D LANDFILL C&D	421001-1202 ACTIVE
MESSER MIRROR LANDFILL INDUSTRIAL	IWP-196 ---------
PALMETTO LANDFILL DOMESTIC	422401-1101 ACTIVE
PALMETTO LANDFILL DOMESTIC	DWP-092 ACTIVE
TINDAL CONCRETE SPECIAL WASTE LANDFILL INDUSTRIAL	423340-1601 ACTIVE

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
VULCAN MATERIAL CO. LYMAN QUARRY	0587-83 GRANITE
LINK LINK SOIL BORROW PIT	1537-83 SAND
FAIRFOREST VENTURE PARTNERS CEDAR CREST	1357-83 SAND; SAND/CLAY

Growth Potential

There is a high potential for industrial, commercial, and residential growth in this watershed, which contains the Town of Duncan and the City of Spartanburg. I-26 and I-85 bisect the watershed and growth is expected around the major highway interchanges, along with industrial developmental pressures along U.S. Hwy. 29 and U.S. Hwy. 221. The Cities of Greer and Spartanburg are connected via the I-85 corridor, and the Town of Duncan is expected to serve as a bedroom community for the Greer-Spartanburg area. The City of Spartanburg is building regional treatment facilities, which should provide for future growth.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in the **North Tyger River** at water quality monitoring sites ***B-219*** and ***B-018A*** and in a tributary at ***B-315***. Wellford Estates Trailer Park (SC0030571) discharges into Frey Creek, a tributary of the North Tyger River. Spartanburg Sanitary Sewer District Lower North Tyger River WWTP discharges in the North Tyger 5.5 km upstream of B-018A. The watershed upstream of B-219 is within two Municipal Separate Storm Sewer System (MS4) designated areas: Town of Lyman and Spartanburg County. Possible sources of fecal coliform bacteria in the North Tyger River upstream of B-219 include MS4 runoff, leaking sewers, failing onsite wastewater disposal systems, pets, and wildlife. For the North Tyger River at B-018A possible sources include failing onsite wastewater disposal systems, cattle in streams, pets, and wildlife. The TMDL specifies reductions in the load of fecal coliform bacteria into the North Tyger River of 52% (B-315), 46% (B-219), and 75% (B-018A) in order for the river to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page at www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

Special Projects

Tyger River Basin Fecal Coliform TMDL Implementation Project

The Tyger River Basin has been included in the South Carolina's Section 303(d) List for impaired waterbodies for violation of the fecal coliform water quality standard. A TMDL for fecal coliform bacteria was developed for the 25 sampling sites within the watershed. Eleven of these fall within the Municipal Separate Storm Sewer System (MS4) areas. TMDLs for the remaining 15 sites call for reductions ranging from 16% to 82%. The TMDL document indicates that nonpoint sources are the main contributors of fecal coliform bacteria contamination for these sites. Four upstate counties, Soil and Water Conservation Districts, the SJWD Water District, USC Upstate have partnered with Clemson University and several other cooperators to implement the TMDL. Their project addresses several strategies for TMDL implementation through the development and promotion of measures focused at reducing fecal coliform contamination. The goal of the project is to reduce the fecal coliform bacteria load to the Tyger River Basin through agricultural practices, rural residential septic system repairs and urban storm water reductions. This will be done by offering cost share assistance to recruit livestock farmers to develop farm plans and implement BMPs to reduce animal waste from entering the watershed and to recruit homeowners to repair failing septic systems. The project will also educate the public about the potential sources of Fecal Coliform and means of reducing fecal coliform pollution of the watershed.

03050107-03

(South Tyger River/Lake Robinson)

General Description

Watershed 03050107-03 (formerly 03050107-010) is located in Greenville and Spartanburg Counties and consists primarily of ***South Tyger River*** and its tributaries. The watershed occupies 110,032 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 48.0% forested land, 31.3% agricultural land, 16.1% urban land, 1.6% forested wetland, 1.6% water, 0.7% barren land, and 0.7% scrub/shrub land.

Mush Creek (Johnson Creek, Dysort Lake, Meadow Fork), Barton Creek (McKinney Creek also known as Burban Fork Creek, Noe Creek), and Pax Creek join to form the South Tyger River near Pax Mountain. Just downstream of the confluence the South Tyger River is impounded to form Lake Robinson. Downstream of Lake Robinson, the South Tyger River is joined by Beaverdam Creek and forms Lake Cunningham (Clear Creek). Downstream from Lake Cunningham near the City of Greer, the river accepts drainage from Frohawk Creek, Wards Creek, and Maple Creek. The river then flows through Berrys Pond and accepts drainage from 58 acre-Silver Lake (Williams Creek), Brushy Creek (Powder Branch), Bens Creek, Chickenfoot Creek, and Ferguson Creek (Quarter Creek, Big Ferguson Creek, Little Ferguson Creek). There are a total of 205.3 stream miles and 1,504.0 acres of lake waters in this watershed.

Surface Water Quality

Station #	Type	Class	Description
B-317	P/W	FW	MUSH CREEK AT SC 253, BELOW TIGERVILLE
RL-04361	RL04	FW	LAKE ROBINSON, 2.3 MI NNW OF DAM
RL-03343	RL03	FW	LAKE ROBINSON, IN COVE 0.5MI SW OF S-23-113 CROSSING
RL-02327	RL02	FW	LAKE ROBINSON, 0.4 MI S OF S-23-113
RL-02453	RL02	FW	LAKE ROBINSON, 0.7 MI S OF S-23-113
RL-04365	RL04	FW	LAKE ROBINSON, 1.0 MI NNW OF DAM
RL-02321	RL02	FW	LAKE ROBINSON, 6.3 MI NNW OF GREER
RL-01025	RL01	FW	LAKE ROBINSON, 5.9 MI NNW OF GREER
CL-100	W	FW	LAKE ROBINSON, IN FOREBAY NEAR DAM
B-341/RL-03347	W	FW	LAKE CUNNINGHAM ,IN FOREBAY NEAR DAM
B-149	S/W	FW	SOUTH TYGER RIVER AT SC 14, 2.9 MI NNW OF GREER
B-263	S/W	FW	SOUTH TYGER RIVER AT SC 290, 3.7 MI E OF GREER
B-625	BIO	FW	MAPLE CREEK AT SR 644
B-005	S/SPRP	FW	SOUTH TYGER RIVER AT S-42-63
B-782	BIO	FW	BENS CREEK AT SC 417
RS-01048	RS01	FW	SOUTH TYGER RIVER OFF COUNTY RD 9978, 3.5 MI NE OF WOODRUFF
B-332	W	FW	SOUTH TYGER RIVER AT S-42-86, 5 MI NE OF WOODRUFF
B-787	BIO	FW	FERGUSON CREEK AT SR 86

Mush Creek (B-317) – Aquatic life uses are fully supported, and significant decreasing trends in turbidity and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions.

Lake Robinson **–** There are eight SCDHEC monitoring stations along Lake Robinson ***(RL-04361, RL-03343, RL-02327, RL-02453, RL-04365, RL-02321, RL-01025, CL-100)***, and aquatic life and recreational uses are fully supported at all sites. A very high concentration of cadmium was measured in the 2003 sediment sample from ***RL-03343***, and DDT and DDE (a metabolite of DDT) were detected. A very high concentration of cadmium was measured in the 2001 sediment sample from ***RL-01025***, and DDE (a metabolite of DDT) was detected. Although the use of DDT was banned in 1973, it is very persistent in the environment.

Lake Cunningham (B-341/RL-03347) **–** Aquatic life and recreational uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration. A very high concentration of cadmium was measured in the 2003 sediment sample. DDT, DDD, and DDE (metabolites of DDT) were also detected in the sample. Although the use of DDT was banned in 1973, it is very persistent in the environment. *Fish tissue samples from Lake Cunningham indicate no advisories are needed at this time.*

South Tyger River **–** There are five SCDHEC monitoring stations along the South Tyger River. Aquatic life and recreational uses are fully supported at the furthest upstream site ***(B-149)***; however, there is a significant decreasing trend in dissolved oxygen concentration. There is a significant increasing trend in pH. At the next site downstream ***(B-263)***, aquatic life uses are fully supported. Significant decreasing trends in turbidity and increasing trends in dissolved oxygen concentration suggest improving conditions for these parameters. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Further downstream ***(B-005)***, aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life chronic criterion. Significant decreasing trends in total nitrogen concentration and increasing trends in dissolved oxygen concentration suggest improving conditions for these parameters. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions. Aquatic life and recreational uses are fully supported at monitoring site ***RS-01048***. At the furthest downstream site ***(B-332)***, aquatic life uses are fully supported and a significant decreasing trend in total nitrogen concentration suggests improving conditions for this parameter. There is a significant decreasing trend in pH. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions.

Maple Creek (B-625) **–** Aquatic life uses are fully supported based on macroinvertebrate community data.

Bens Creek (B-782) **–** Aquatic life uses are fully supported based on macroinvertebrate community data.

Ferguson Creek (B-787) – Aquatic life uses are fully supported based on macroinvertebrate community data.

Natural Swimming Areas

FACILITY NAME	***PERMIT #***
RECEIVING STREAM	***STATUS***
LOOK UP LODGE	23-N14
BURBAN FORK CREEK	ACTIVE

NPDES Program

Active NPDES Facilities

RECEIVING STREAM	***NPDES#***
FACILITY NAME	***TYPE***
PERMITTED FLOW @ PIPE (MGD)	***COMMENT***
SOUTH TYGER RIVER	SC0047732
SSSD/S. TYGER REGIONAL WWTP	MAJOR DOMESTIC
PIPE #:001 FLOW: 1.0	
SOUTH TYGER RIVER	SC0030465
LAKEVIEW STEAK HOUSE	MINOR DOMESTIC
PIPE #: 001 FLOW: 0.0158	
SOUTH TYGER RIVER	SC0036145
MIDLAND CAPITAL LLC/MOORE PLANT	MINOR INDUSTRIAL
PIPE #: 001 FLOW: 0.026	
SOUTH TYGER RIVER	SCG645020
CITY OF GREER CPW WTP	MINOR DOMESTIC
PIPE #: 001, 002 FLOW: M/R	
SOUTH TYGER RIVER	SC0046345
CITY OF GREER/MAPLE CREEK PLT	MAJOR DOMESTIC
PIPE #: 001 FLOW: 4.5 (PHASE II)	
BEAVERDAM CREEK	SCG730079
HANSON AGGREGATES/SANDY FLATS	MINOR INDUSTRIAL
PIPE #: 001 FLOW: M/R	
BURBAN FORK CREEK	SC0026379
LOOK UP FOREST HOMES ASSOC.	MINOR DOMESTIC
PIPE #: 001 FLOW: 0.03	
MEADOW FORK	SC0026565
UNITED UTIL./NORTH GREENVILLE COLLEGE	MINOR DOMESTIC
PIPE #: 001 FLOW: 0.2	
WILLIAMS CREEK	SC0023451
MILLIKEN/ARMITAGE PLANT	MINOR INDUSTRIAL
PIPE #: 001 FLOW: 0.01	

WILLIAMS CREEK TRIBUTARY US ALUMOWELD CO., INC. PIPE #: 001 FLOW: 0.0086	SC0043982 MINOR INDUSTRIAL
SOUTH TYGER RIVER TRIBUTARY JERRY SMITH/JERRYCO MINE PIPE #: 001 FLOW: M/R	SCG730567 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
BLUE RIDGE LANDFILL DOMESTIC	---------- CLOSED
GREENVILLE COUNTY DOMESTIC	---------- INACTIVE
GODFREY LANDFILL INDUSTRIAL	IWP-225 CLOSED
GLENN SHORT TERM C&D LANDFILL C&D	232903-1301 INACTIVE
GREER MUNCIPAL SW TRANSFER STATION DOMESTIC	422323-6001 ACTIVE
BROOKWOOD DRIVE LANDFILL C&D	232900-1301 INACTIVE
WR GRACE CO.– CRYOVAC DIV. C&D	422900-1301 INACTIVE
CITY OF GREER SW TRANSFER STATION DOMESTIC	231003-6001 ACTIVE
VICTOR HILL SW PROCESSING FACILITY DOMESTIC	422713-2001 ACTIVE
SMITH LCD&YT C&D	422419-1701 ACTIVE
HAWKINS GRADING LCD C&D	422473-1701; 422473-1702 ACTIVE
BROWN LCD & YT C&D	422474-1702 ACTIVE

Land Application Sites

LAND APPLICATION SYSTEM FACILITY NAME	*ND# TYPE*
SPRAYFIELD RD ANDERSON APPLIED TECH. CTR.	ND0067351 DOMESTIC

Mining Activities

MINING COMPANY MINE NAME	*PERMIT # MINERAL*
HANSON AGGREGATES SE, INC. SANDY FLAT QUARRY	0502-45 GRANITE
DUN GRADING PITTMAN MINE	1792-45 SAND
COX & FLYOD GRADING INC. LISTER ROAD BORROW SITE	1564-83 SAND/CLAY

Water Quantity

WATER USER STREAM	*REGULATED CAPACITY (MGD) PUMPING CAPACITY (MGD)*
CITY OF GREER CPW LAKE CUNNINGHAM	24.0 33.0

Growth Potential

There is a high potential for industrial, commercial, and residential growth in this watershed, which contains the City of Greer, and portions of the Town of Duncan and the City of Woodruff. The Greenville-Spartanburg Airport expansion, the development of the BMW automotive plant, and highway improvements in the area surrounding the BMW plant will stimulate continued growth. Growth is also expected around the I-85 and U.S. Hwy. 29 corridors, which connect the Cities of Greenville, Greer, and Spartanburg. The Town of Duncan is expected to serve as a bedroom community for the Greer-Spartanburg area.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Mush Creek** at water quality monitoring site ***B-317***. No currently active facilities that have fecal coliform limits in their NPDES permits discharge into the creek. The watershed is within a Municipal Separate Storm Sewer System (MS4) designated area: Greenville County, though it is outside of the urbanized area. Possible sources of fecal coliform bacteria in Mush Creek include failing onsite wastewater disposal systems, cattle in creeks, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Mush Creek of 31% in order for the creek to meet the recreational use standard.

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in the **South Tyger River** at water quality monitoring sites ***B-263, B-005***, and ***B-332***. Union's Beltline WWTP (SC0021202) discharges into South Tyger River just downstream of B-286. The watershed is within four MS4 designated areas: City of Greer, City of Duncan, Greenville County, and, Spartanburg County. Possible sources of fecal coliform bacteria in the South Tyger River upstream of B-005 include MS4 runoff, leaking sewers, failing onsite wastewater disposal systems, pets, and wildlife. For the South Tyger River at B-332 possible sources include upstream sources, failing onsite wastewater disposal systems, cattle in streams, pets, and wildlife. The TMDL specifies reductions in the load of fecal coliform bacteria into South Tyger River of 13% (B-263), 8% (B-005), and 33% (B-332) in order for the river to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

Special Projects

Tyger River Basin Fecal Coliform TMDL Implementation Project

The Tyger River Basin has been included in the South Carolina's Section 303(d) List for impaired waterbodies for violation of the fecal coliform water quality standard. A TMDL for fecal coliform bacteria was developed for the 25 sampling sites within the watershed. Eleven of these fall within the Municipal Separate Storm Sewer System (MS4) areas. TMDLs for the remaining 15 sites call for reductions ranging from 16% to 82%. The TMDL document indicates that nonpoint sources are the main contributors of fecal coliform bacteria contamination for these sites. Four upstate counties, Soil and Water Conservation Districts, the SJWD Water District, USC Upstate have partnered with Clemson University and several other cooperators to implement the TMDL. Their project addresses several strategies for TMDL implementation through the development and promotion of measures focused at reducing fecal coliform contamination. The goal of the project is to reduce the fecal coliform bacteria load to the Tyger River Basin through agricultural practices, rural residential septic system repairs and urban storm water reductions. This will be done by offering cost share assistance to recruit livestock farmers to develop farm plans and implement BMPs to reduce animal waste from entering the watershed and to recruit homeowners to repair failing septic systems. The project will also educate the public about the potential sources of Fecal Coliform and means of reducing fecal coliform pollution of the watershed.

03050107-04

(Fairforest Creek)

General Description

Watershed 03050107-04 (formerly 03050107-060 minus Tinker Creek) is located in Spartanburg and Union Counties and consists primarily of ***Fairforest Creek*** and its tributaries. The watershed occupies 139,664 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 54.5% forested land, 22.0% agricultural land, 17.0% urban land, 4.0% forested wetland, 1.3% barren land, 0.6% water, and 0.6% scrub/shrub land.

Fairforest Creek originates near the City of Spartanburg and accepts drainage from Goat Pond Creek, Holston Creek, Beaverdam Creek (Reedy Creek), Foster Creek (Underwood Branch), Reedy Branch, Buffalo Creek (Zimmerman Pond), Fleming Branch, Goose Branch, Stillhouse Branch (Smith Branch), and Lancaster Branch (James Branch, Pauline Creek, Dugan Creek). Kelsey Creek flows through Lake Craig (Lake Johnson, Thompson Creek) before entering Fairforest Creek. Black Branch (Whitestone Spring Branch) flows into Fairforest Creek next followed by McElwain Creek (Story Branch, Mineral Spring Branch, Sulphur Spring Branch), Kennedy Creek (Iscons Creek, Cunningham Creek), McClure Creek, Sugar Creek (another Beaverdam Creek, Whitlock Lakes, White Pine Lake), Swink Creek (Bishop Branch), and Rocky Creek. Swink Creek is also known as Mitchell Creek and Bishop Branch is also known as Mill Creek. Further downstream, Fairforest Creek accepts drainage from Mitchell Creek, another Sugar Creek (West Springs Branch), another Buffalo Creek, Dining Creek, Shoal Creek (Toschs Creek), Sand Creek, and Morris Branch. There are a total of 250.7 streams miles and 417.6 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
B-321	P/W	FW	TRIBUTARY TO FAIRFOREST CREEK, 200 FEET BELOW S-42-65
B-020	S/W	FW	FAIRFOREST CREEK AT US 221, S OF SPARTANBURG
B-164	S/W	FW	FAIRFOREST CREEK AT S-42-651, 3.5 MI SSE OF SPARTANBURG
B-021	P/BIO/W	FW	FAIRFOREST CREEK AT SC 56
B-235	S/W	FW	KELSEY CREEK AT S-42-321
CL-035	W	FW	LAKE JOHNSON AT SPILLWAY AT S-42-359
RL-01005	RL01	FW	LAKE CRAIG, CROFT STATE PARK, 7.5 MI SE OF SPARTANBURG
RL-01035	RL01	FW	LAKE CRAIG, CROFT STATE PARK, 7.95 MI SE OF SPARTANBURG
CL-033	W	FW	LAKE CRAIG, 45 METERS NW OF DAM
BF-007	S/SPRP	FW	FAIRFOREST CREEK ON COUNTY ROAD 12, SW OF JONESVILLE
B-199	S/W	FW	MITCHELL CREEK AT COUNTY ROAD 233, 2.3 MI SSW OF JONESVILLE
B-781	BIO	FW	MITCHELL CREEK AT SR 19, 1ST REPLICATE OF 2 STA., DSTRM OF BRIDGE
B-067A	S/W	FW	TOSCHS CREEK AT US 176, 2 MI SW OF UNION
B-067B	S/W	FW	TOSCHS CREEK AT ROAD TO TREATMENT PLANT OFF S-44-92, SW OF UNION
BF-008	S/BIO/INT	FW	FAIRFOREST CREEK AT S-44-16, SW OF UNION

Fairforest Creek Tributary (B-321) **-** Aquatic life uses are not supported due to macroinvertebrate community data, pH excursions, and occurrences of nickel in excess of the aquatic life chronic criterion. There is a significant decreasing trend in pH. Significant decreasing trends in turbidity, total phosphorus concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions.

Fairforest Creek – There are five SCDHEC monitoring stations along Fairforest Creek. Aquatic life uses are fully supported at the furthest upstream site ***(B-020)***, and a significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. At the next site downstream ***(B-164)***, aquatic life uses are fully supported; however, there are significant increasing trends in five-day biological oxygen demand and total phosphorus concentration. There is a significant increasing trend in pH. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are not supported at this site due to fecal coliform bacteria excursions.

Further downstream ***(B-021)***, aquatic life uses are partially supported due to macroinvertebrate community data. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. Aquatic life uses are fully supported at monitoring site ***BF-007***; however, there are significant increasing trends in five-day biological oxygen demand and turbidity. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. At the furthest downstream site ***(BF-008)***, aquatic life uses are fully supported based on macroinvertebrate community data; however, there are significant increasing trends in five-day biological oxygen demand and decreasing trends in dissolved oxygen concentration. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions.

Kelsey Creek (B-235) – Aquatic life uses are fully supported, but recreational uses are not supported due to fecal coliform bacteria excursions.

Lake Johnson (CL-035) – Aquatic life uses are not supported due to dissolved oxygen, pH, total phosphorus, and chlorophyll-*a* excursions. Recreational uses are fully supported.

Lake Craig – There are three SCDHEC monitoring stations along Lake Craig ***(RL-01005, RL-01035, CL-033)***, and aquatic life and recreational uses are fully supported at all sites.

Mitchell Creek (Swink Creek) – There are two SCDHEC monitoring stations along Mitchell Creek. At the upstream site ***(B-199),*** aquatic life uses are fully supported. Recreational uses are not

supported at this site due to fecal coliform bacteria excursions, which are compounded by a significant increasing trend in fecal coliform bacteria concentration. At the downstream site ***(B-781)***, aquatic life uses are partially supported based on macroinvertebrate community data.

Toschs Creek - There are two SCDHEC monitoring stations along Toschs Creek. There is a significant decreasing trend in pH at both sites. At the upstream site ***(B-067A),*** aquatic life uses are fully supported. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. At the downstream site ***(B-067B)***, aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. Recreational uses are not supported at either site due to fecal coliform bacteria excursions.

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-109	GB	PIEDMONT BEDROCK	SPARTANBURG
AMB-073	GB	SAPROLITE	UNION-SHALLOW
AMB-083	GB	PIEDMONT BEDROCK	UNION-DEEP

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
FAIRFOREST CREEK SSSD/FAIRFOREST PLANT PIPE #: 001 (Conversion to Regional WWTF) PHASE II: Upgrade SSSD/Fairforest to 20mgd; Construct new outfall to Pacolet River PHASE III: Eliminate SSSD/Lawson Fork & Upgrade SSSD/Fairforest to 30mgd	SC0020435 MAJOR DOMESTIC
FAIRFOREST CREEK FAIRWOODS SD/UNITED UTILITIES PIPE #: 001 FLOW: 0.065	SC0035041 MINOR DOMESTIC
FAIRFOREST CREEK SSSD/CAROLINA COUNTRY CLUB PIPE #: 001 FLOW: 0.1	SC0039560 MINOR DOMESTIC
FAIRFOREST CREEK CITY OF UNION/TOSCHS CREEK WWTP PIPE #: 001 FLOW: 6.0	SC0047244 MAJOR DOMESTIC
FAIRFOREST CREEK FAIRFOREST SAND CO./FAIRFOREST CK SAND MINE PIPE #: 001 FLOW: M/R	SCG730202 MINOR INDUSTRIAL
FAIRFOREST CREEK DITCH ADO CORPORATION PIPE #: 001 FLOW: M/R	SCG250071 MINOR INDUSTRIAL

GOAT POND CREEK — SC0047805
CONOCO PHILLIPS — MINOR INDUSTRIAL
PIPE #: 001 FLOW: 0.043

KELSEY CREEK — SCG340008
CITCO PETROLEUM CORP. — MINOR INDUSTRIAL
PIPE #: 001 FLOW: M/R

MILL CREEK — SC0024988
TOWN OF JONESVILLE — MINOR DOMESTIC
PIPE #: 001 FLOW: 0.25

MINERAL SPRING BRANCH — SC0024449
GLENN SPRINGS ACADEMY — MINOR DOMESTIC
PIPE #: 001 FLOW: 0.0035

ISCONS CREEK TRIBUTARY — SC0023370
MILLIKEN & CO./WHITESTONE PKG — MINOR INDUSTRIAL
PIPE #: 001 FLOW: 0.432

FAIRFOREST CREEK TRIBUTARY — SC0048178
I-85 DISTRIBUTION CENTER SITE — MINOR INDUSTRIAL
PIPE #: 001 FLOW: 0.129

FAIRFOREST CREEK TRIBUTARY — SCG250195
TINDALL CORP./SC DIV — MINOR INDUSTRIAL
PIPE #: 001 FLOW: M/R

FAIRFOREST CREEK TRIBUTARY — SCG250214
STERIS CORP./ISOMEDIX SERVICES — MINOR INDUSTRIAL
PIPE #: 001 FLOW: M/R

KELSEY CREEK TRIBUTARY — SCG340017
COLONIAL PIPELINE/SPARTANBURG — MINOR INDUSTRIAL
PIPE #: 001 FLOW: M/R

SHOAL CREEK TRIBUTARY — SCG250210
THE TIMKEN CORPORATION — MINOR INDUSTRIAL
PIPE #: 001 FLOW: M/R

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME — ***PERMIT #***
FACILITY TYPE — ***STATUS***

RED HILL LANDFILL — 422429-1601
INDUSTRIAL — INACTIVE

RED HILL COMPOSTING FACILITY — 422429-3001
COMPOST — INACTIVE

RED HILL SOLID WASTE LANDFILL — 422444-1601
INDUSTRIAL — INACTIVE

CAMP CROFT LANDFILL DOMESTIC	421001-1102 CLOSED
CITY OF SPARTANBURG TRANSFER STATION DOMESTIC	421005-6001 ACTIVE
CITY OF UNION – BRISON ST C&D CONSTRUCTION	441003-1301 INACTIVE
PHILIPPI CHURCH RD ST LANDFILL CONSTRUCTION	442604-1701, 442604-1301 INACTIVE
BROADCAST DR C&D TRANSFER STATION C&D	422692-6001 ACTIVE
MAXIE COPELAND LANDFILL LONGTERM C&D LANDFILL	442329-1201 ACTIVE
FAIRFOREST WOOD RECYCLING CENTER RECYCLING	422749-3001 ACTIVE
SPARTANBURG W. HENRY ST. COMPOSTING	421005-3002 INACTIVE
CITY OF SPARTANBURG HWY 295 COMP. FAC. COMPOSTING	421005-3001 ACTIVE
JEFF THOMAS-STRICKLAND DR. LCD & YT LANDFILL C&D	422459-1701 ACTIVE
TAYLOR ENTERPRISES INC. ----------	422665-7101 ACTIVE
T. GLEN EASLER GRADING & LANDSCAPING C&D	422607-1701 ACTIVE
WOOD GRADING LCD&YT C&D	422461-1701 INACTIVE
CITY OF UNION SW TRANSFER FACILITY MUNCIPAL	441003-6001 ACTIVE

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
FAIRFOREST SAND CO. FAIRFOREST CREEK SAND MINE	1059-83 SAND
RAY LEMONS BULLDOZING LEMONS MINE	1241-83 SAND; SAND/CLAY

Growth Potential

There is a high potential for growth in this watershed, which contains portions of the Cities of Spartanburg and Union, the Towns of Pacolet and Jonesville, and the Buffalo Mill Village. Industrial growth in particular is expected along the I-85 corridor and major roads with I-85 interchanges. There are also industrial developmental pressures along I-26, U.S. Hwy. 29, and U.S. Hwy. 221. Urban development is evident in the City of Union and in the unincorporated Buffalo Mill Village in the form of residential, commercial, and industrial uses. Growth is most evident along the U.S. Hwy. 176 Bypass. U.S. Hwy. 176 north from Union to Spartanburg has been widened to four lanes and has generated the development of an industrial park. The lower portion of the watershed is effectively excluded from development by the Sumter National Forest. Union County is currently looking at the idea of damming the creek to form a multi use lake (Patriot Lake).

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Fairforest Creek** and a tributary at water quality monitoring sites ***B-321*** (tributary), ***B-020, B-164, B-021, BF-007***, and ***BF-008***. Three currently active facilities that have fecal coliform limits in their NPDES permits discharge into tributaries of the creek; four facilities currently discharge directly into Fairforest Creek; two of these are classified as major facilities. The upper part of the watershed (B-321, B-020, B-164, and B-021) is within two Municipal Separate Storm Sewer System (MS4) designated areas: Spartanburg County and City of Spartanburg. Possible sources of fecal coliform bacteria in Fairforest Creek upstream of B-021 include MS4 runoff, leaking sewers, failing onsite wastewater disposal systems, urban residential runoff, pets, and wildlife. Possible sources in lower Fairforest Creek (BF-007 and B-008) include upstream sources, failing onsite wastewater disposal systems, cattle in creek, pets, and wildlife. The TMDL specifies reductions in the load of fecal coliform bacteria into Fairforest Creek of 73% (B-321), 73% (B-020), 83% (B-164), 73%(B-021), 53% (BF-007), and 58% (BF-008) in order for the creek to meet the recreational use standard.

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Kelsey Creek** at water quality monitoring site ***B-235***. No currently active facilities that have fecal coliform limits in their NPDES permits discharge into the creek. The watershed is within a MS4 designated area: Spartanburg County. Possible sources of fecal coliform bacteria in Kelsey Creek include failing sewers, MS4 runoff, failing onsite wastewater disposal systems, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Kelsey Creek of 64% in order for the creek to meet the recreational use standard.

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Mitchell (Swink) Creek** at water quality monitoring site ***B-199***. Currently the Town of Jonesville (SC0024988) operates a WWTP on a tributary – Mill Creek. The watershed is not within a MS4 designated area. Possible sources of fecal coliform bacteria in Mitchell Creek include failing onsite wastewater disposal systems, urban residential runoff, pets, and wildlife. The TMDL specifies a

reduction in the load of fecal coliform bacteria into Mitchell Creek of 46% in order for the creek to meet the recreational use standard.

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Toschs Creek** at water quality monitoring sites ***B-067A*** and ***B-067B***. No currently active facilities that have fecal coliform limits in their NPDES permits discharge into the creek. The watershed is not within a MS4 designated area. Possible sources of fecal coliform bacteria into Toschs Creek include leaking sewers, urban residential runoff, failing onsite wastewater disposal systems, pets, and wildlife. The TMDL specifies reductions in the load of fecal coliform bacteria into Toschs Creek of 78% (B-067A) and of 74% (B-067B) in order for the creek to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

Special Projects

Tyger River Basin Fecal Coliform TMDL Implementation Project

The Tyger River Basin has been included in the South Carolina's Section 303(d) List for impaired waterbodies for violation of the fecal coliform water quality standard. A TMDL for fecal coliform bacteria was developed for the 25 sampling sites within the watershed. Eleven of these fall within the Municipal Separate Storm Sewer System (MS4) areas. TMDLs for the remaining 15 sites call for reductions ranging from 16% to 82%. The TMDL document indicates that nonpoint sources are the main contributors of fecal coliform bacteria contamination for these sites. Four upstate counties, Soil and Water Conservation Districts, the SJWD Water District, USC Upstate have partnered with Clemson University and several other cooperators to implement the TMDL. Their project addresses several strategies for TMDL implementation through the development and promotion of measures focused at reducing fecal coliform contamination. The goal of the project is to reduce the fecal coliform bacteria load to the Tyger River Basin through agricultural practices, rural residential septic system repairs and urban storm water reductions. This will be done by offering cost share assistance to recruit livestock farmers to develop farm plans and implement BMPs to reduce animal waste from entering the watershed and to recruit homeowners to repair failing septic systems. The project will also educate the public about the potential sources of Fecal Coliform and means of reducing fecal coliform pollution of the watershed.

03050107-05

(Tyger River)

General Description

Watershed 03050107-05 (formerly 03050107-050 plus Tinker Creek) is located in Spartanburg and Union Counties and consists primarily of the ***Tyger River*** and its tributaries. The watershed occupies 156,602 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 69.3% forested land, 20.2% agricultural land, 4.7% urban land, 3.4% forested wetland, 1.1% barren land, 0.8% scrub/shrub land, and 0.5% water.

The Tyger River is formed by the confluence of the South Tyger River Watershed and the North Tyger River Watershed. The Tyger River then accepts drainage from Nichol Branch (Kelly Branch), Vise Branch, Harrelson Branch (Wofford Branch, Aiken Branch), Jimmies Creek, Cane Creek (Martha Shands Branch, Williams Branch, Trail Branch), Motley Branch, Hackers Creek, and Dutchman Creek. Dutchman Creek accepts drainage from Harrison Branch, Newman Branch, Smith Creek (Jennings Branch), Powder Spring Branch, Shands Branch (Pennywinkle Branch), Paint Bearden Branch, Bearden Branch, another Wofford Branch, Wiley Fork Creek (Carson Branch), and Dry Branch. Cowdens Creek enters the river next followed by Mill Creek, another Wofford Branch, Holcombe Branch, Isaacs Creek, and Sparks Creek. Further downstream, the Tyger River accepts drainage from the Fairforest Creek Watershed, Tinker Creek (Henry Creek, Reno Lake, Brushy Creek, Swift Run), Hawkins Creek, Johnsons Creek, Padgetts Creek, Evans Branch, Rennicks Branch, Duffs Branch, Peters Creek, and Cane Creek (Brocks Creek). There are a total of 306.3 streams miles and 140.3 acres of lake waters in this watershed, all classified FW. The lower half of the watershed resides within the Sumter National Forest. Rose Hill State Park is located near the confluence of the Tyger River and Fairforest Creek.

Surface Water Quality

Station #	Type	Class	Description
B-008	P/W	FW	TYGER RIVER AT S-42-50, E OF WOODRUFF
B-019	S/W	FW	JIMMIES CREEK AT S-42-201, 2 MI E OF WOODRUFF
B-786	BIO	FW	JIMMIES CREEK AT STEWART RD, 1MI UPSTREAM OF SR 113
B-733	BIO	FW	DUTCHMAN CREEK AT S-42-511
B-286	S/W	FW	TINKER CREEK AT ROAD TO TREATMENT PLANT, 1.3 MI SSE OF UNION
B-287	S/W	FW	TINKER CREEK AT UNNUMBERED COUNTY ROAD, 1.7 MI SSE OF UNION
B-336	W/BIO	FW	TINKER CREEK AT S-44-278, 9 MI SSE OF UNION
B-051	P/W	FW	TYGER RIVER AT SC 72, 5.5 MI SW OF CARLISLE
B-349	INT	FW	TYGER RIVER AT S-44-35, 3.5 MI S OF CARLISLE
B-777	BIO	FW	CANE CREEK AT SR 359

Tyger River – There are three SCDHEC monitoring stations along the Tyger River. At the furthest upstream site ***(B-008)***, aquatic life uses are fully supported. There is a significant decreasing trend in pH. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions.

Aquatic life and recreational uses are fully supported at the midstream site ***(B-051)***; however, there is a significant increasing trend in five-day biochemical oxygen demand. A very high concentration of cadmium was measured in the 2004 sediment sample. At the downstream site ***(B-349)***, aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life chronic criterion. There is also a significant increasing trend in five-day biochemical oxygen demand. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions.

Jimmies Creek – There are two SCDHEC monitoring stations along Jimmies Creek. At the upstream site ***(B-019)***, aquatic life uses are fully supported. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. At the downstream site ***(B-786)***, aquatic life uses are partially supported based on macroinvertebrate community data.

Dutchman Creek (B-733) – Aquatic life uses are fully supported based on macroinvertebrate community data.

Tinker Creek – There are three SCDHEC monitoring stations along Tinker Creek. Recreational uses are not supported at any site due to fecal coliform bacteria excursions. At the furthest upstream site ***(B-286)***, aquatic life uses are fully supported. Aquatic life uses are not supported at the midstream site ***(B-287)*** due to pH and turbidity excursions. There is also a significant decreasing trend in dissolved oxygen concentration. At the downstream site ***(B-336)***, aquatic life uses are fully supported based on macroinvertebrate community data; however, there is a significant decreasing trend in dissolved oxygen concentration and an increasing trend in five-day biochemical oxygen demand.

Cane Creek (B-777) – Aquatic life uses are partially supported based on macroinvertebrate community data.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME*** ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** ***TYPE*** ***COMMENT***
TYGER RIVER SC DEPT. CORR./CROSS ANCHOR CORR. INST. PIPE #: 001 FLOW: 0.35	SC0036773 MINOR DOMESTIC
TYGER RIVER KING ASPHALT/JOSEPH THEO MINE PIPE #: 001 FLOW: M/R	SCG730478 MINOR INDUSTRIAL
TYGER RIVER RAY BROWN/TYGER RANCH SAND PIT PIPE #: 001 FLOW: M/R	SCG730543 MINOR INDUSTRIAL

TYGER RIVER TRIBUTARY — SCG730096
WR GRACE & CO./CL CASEY MINE — MINOR INDUSTRIAL
PIPE #: 001 FLOW: M/R

TINKER CREEK — SC0021202
CITY OF UNION/BELTLINE PLANT — MINOR DOMESTIC
PIPE #: 001 FLOW: 0.35

JIMMIES CREEK TRIBUTARY — SCG730105
WR GRACE/JOHNSON MINE — MINOR INDUSTRIAL
PIPE #: 001 FLOW: M/R

JIMMIES CREEK TRIBUTARY — SCG730151
CAROLINA VERMICULITE/F YOUNG MINE — MINOR INDUSTRIAL
PIPE #: 001 FLOW: M/R

JIMMIES CREEK TRIBUTARY — SCG730440
WR GRACE CO./ROGERS FOSTERS MINE — MINOR INDUSTRIAL
PIPE #: 001 FLOW: M/R

TYGER RIVER TRIBUTARY — SCG730004
WR GRACE/PROVIDENCE MINE — MINOR INDUSTRIAL
PIPE #: 001 FLOW: M/R

CANE CREEK TRIBUTARY — SCG250188
JERVIS B WEBB CO./CARLISLE SC — MINOR INDUSTRIAL
PIPE #: 001 FLOW: M/R

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME / ***FACILITY TYPE***	***PERMIT #*** / ***STATUS***
WOODRUFF INERT & CELLULOSIC LANDFILL / DOMESTIC	DWP-916 / CLOSED
LANDFORD ROAD LAND CLEARING / CONSTRUCTION	421002-1201 / INACTIVE
SIMS JUNIOR HIGH / DOMESTIC	-------- / INACTIVE
CITY OF UNION LCD&YT / CONSTRUCTION	441003-1701 / ACTIVE

Mining Activities

MINING COMPANY / ***MINE NAME***	***PERMIT #*** / ***MINERAL***
WR GRACE & CO. / JOHNSON	0834-83 / VERMICULITE

WR GRACE & CO. PROVIDENCE MINE	0706-83 VERMICULITE
WR GRACE & CO. C. CASEY MINE	1017-83 VERMICULITE ORE
WR GRACE & CO. RODGERS MINE	0460-83 VERMICULITE
CHAPMAN GRADING & CONCRETE TYGER RIVER PLANT	0494-83 SAND
KING ASPHALT, INC. JOSEPH W. THEO MINE	1124-83 SAND
CAROLINA VERMICULITE CO. FANNIE YOUNG MINE	0585-83 VERMICULITE
RAY BROWN ENTERPRIZES TYGER RANCH SAND PIT	1418-87 SAND - RIVER

Growth Potential

There is an overall low potential for growth in this watershed, which contains portions of the Town of Carlisle and the City of Woodruff. Woodruff is expected to experience residential, commercial, and industrial growth. The lower portion of the watershed is effectively excluded from development by the Sumter National Forest. Union County is actively looking at creating a multi use lake (Patriot Lake) at the confluence of the Tyger River and Fairforest Creek.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Jimmies Creek** at water quality monitoring site ***B-019***. No currently active facilities that have fecal coliform limits in their NPDES permits discharge into the creek. The watershed is not within a Municipal Separate Storm Sewer System (MS4) designated area. Possible sources of fecal coliform bacteria in Jimmies Creek include failing onsite wastewater disposal systems, urban residential runoff, leaking sewers, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Jimmies Creek of 82% in order for the creek to meet the recreational use standard.

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Tinker Creek** at water quality monitoring sites ***B-286, B-287***, and ***B-336***. Union's Beltline WWTP (SC0021202) discharges into Tinker Creek just downstream of B-286. The watershed is not within a MS4 designated area. Possible sources of fecal coliform bacteria in Tinker Creek include leaking sewers, failing onsite wastewater disposal systems, cattle in creeks, urban residential runoff, pets, and wildlife. The TMDL specifies reductions in the load of fecal coliform bacteria into Tinker Creek of

59% (B-286), 16% (B-287), and 28% (B-336) in order for the creek to meet the recreational use standard.

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in the **Tyger River** at water quality monitoring sites ***B-008*** and ***B-051***. Currently The SC Department of Corrections – Tyger River Corrections Facility discharges fecal coliform bacteria into the river under a NPDES permit (SC0036773). The Tyger River watershed is not within a MS4 designated area. Possible sources of fecal coliform bacteria into the Tyger River at B-008 include upstream sources, failing onsite wastewater disposal systems, cattle in creeks, pets, and wildlife. Possible sources into the Tyger River at B-051 include failing onsite wastewater disposal systems, cattle in creeks, pets, and wildlife. The TMDL specifies reductions in the load of fecal coliform bacteria into the Tyger River of 55% (B-008) and of 53% (B-051) in order for the river to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

Special Projects

Tyger River Basin Fecal Coliform TMDL Implementation Project

The Tyger River Basin has been included in the South Carolina's Section 303(d) List for impaired waterbodies for violation of the fecal coliform water quality standard. A TMDL for fecal coliform bacteria was developed for the 25 sampling sites within the watershed. Eleven of these fall within the Municipal Separate Storm Sewer System (MS4) areas. TMDLs for the remaining 15 sites call for reductions ranging from 16% to 82%. The TMDL document indicates that nonpoint sources are the main contributors of fecal coliform bacteria contamination for these sites. Four upstate counties, Soil and Water Conservation Districts, the SJWD Water District, USC Upstate have partnered with Clemson University and several other cooperators to implement the TMDL. Their project addresses several strategies for TMDL implementation through the development and promotion of measures focused at reducing fecal coliform contamination. The goal of the project is to reduce the fecal coliform bacteria load to the Tyger River Basin through agricultural practices, rural residential septic system repairs and urban storm water reductions. This will be done by offering cost share assistance to recruit livestock farmers to develop farm plans and implement BMPs to reduce animal waste from entering the watershed and to recruit homeowners to repair failing septic systems. The project will also educate the public about the potential sources of Fecal Coliform and means of reducing fecal coliform pollution of the watershed.

Broad River Basin Description

The ***Broad River Basin (hydrologic units 03050105 and 03050106)*** is located in Cherokee, Spartanburg, York, Union, Chester, Fairfield, Newberry, and Richland Counties, and encompasses 2,450.4 square miles within South Carolina, excluding the Enoree River and Tyger River Basins. The Broad River flows across the Piedmont region of South Carolina. Of the approximately 1.5 million acres, 60.6% is forested land, 23.8% is agricultural land, 1.2% is scrub/shrub land, 2.1% is forested wetland, 9.8% is urban land, 1.6% is water, and 0.9% is barren land. The urban land percentage is comprised chiefly of the Cities of Spartanburg, Gaffney, and Chester, and portions of the Cities of York, Union, and Columbia. In the Broad River Basin, there are approximately 2,798.6 stream miles and 14,603.0 acres of lake waters. The Broad River flows across the North Carolina/South Carolina state line and accepts drainage from Buffalo Creek, Cherokee Creek, Kings Creek, Thicketty Creek, Bullock Creek, and the Pacolet River. The Broad River then accepts drainage from Turkey Creek, the Sandy River, the Little River, and Cedar Creek before converging with the Saluda River in Columbia.

Physiographic Regions

The USDA Soil Conservation Service divided the State of South Carolina into six Major Land Resource Areas (MLRAs). The MLRAs are physiographic regions that have soils, climate, water resources, and land uses in common. The physiographic regions defining the Broad River Basin are as follows:

The **Blue Ridge** is an area of dissected (separated by erosion into many closely spaced valleys), rugged mountains with narrow valleys dominated by forests; elevations range from 1,000 to 3,300 feet.

The **Piedmont** is an area of gently rolling to hilly slopes with narrow stream valleys dominated by forests, farms, and orchards; elevations range from 375 to 1,000 feet.

The **Sand Hills** are an area of gently sloping to strongly sloping uplands with a predominance of sandy areas and scrub vegetation; elevations range from 250 to 450 feet.

Land Use/Land Cover

General land use/land cover mapping for South Carolina was derived from the U.S. Geological Survey's National Land Cover Data (NLCD), based on nationwide Landsat Thematic Mapper (TM) multispectral satellite images (furnished through the Multi-Resolution Land Characteristics (MRLC) consortium, coordinated by USEPA) using image analysis software to inventory the Nation's land classes. The NLCD are developed by the USGS (EROS Data Center) using TM image interpretation, air photo interpretation, National Wetland Inventory data analysis, and ancillary data analysis.

Urban land is characterized by man-made structures and artificial surfaces related to industrial, commercial, and residential uses, and vegetated portions of urban areas such as recreational grasslands and industrial facility lawns.

Agricultural/Grass land is characterized by row crops, pastures, orchards, vineyards, and hay land, and includes grass cover in fallow, scrub/shrub, forest clearcut and urban areas.

Forestland is characterized by deciduous and evergreen trees (or a mix of these), not including forests in wetland settings, generally greater than 6 meters (approximately 20 feet) in height, with tree canopy of 25-100% cover.

Forested Wetland is saturated bottomland, mostly hardwood, forests primarily composed of wooded swamps occupying river floodplains, moist marginal forests, and isolated low-lying wet areas, located predominantly in the Coastal Plain.

Nonforested Wetland is saturated marshland, most commonly located in coastal tidelands and in isolated freshwater inland areas, found predominantly in the Coastal Plain.

Barren land is characterized by a nonvegetated condition of the land, both natural (rock, beaches, nonvegetated flats) and man-induced (rock quarries, mines, and areas cleared for construction in urban areas or clearcut forest areas).

Water (non-land) includes both fresh (inland) and saline (tidal) waters.

Soil Types

The individual soil series for the Broad River Basin are described as follows.

Alpin soils are well drained and excessively drained, sandy soils with a loamy or sandy subsoil.

Badin soils are moderately deep, well drained, moderately permeable, clayey soils that formed in material weathered from Carolina Slate or other fine grained rock, on ridgetops and side slopes.

Cecil soils are deep, well drained, gently sloping to sloping soils that have red subsoil.

Georgeville soils are gently sloping to sloping, well drained and moderately well drained soils.

Goldston soils are dominantly sloping to steep, well drained to excessively drained soils.

Helena soils are gently sloping to sloping, moderately well drained to well drained soils.

Herndon soils are gently sloping to sloping, well drained and moderately well drained soils.

Hiwassee soils are well drained, moderately sloping soils with clayey subsoil, moderately deep.

Madison soils are well drained, moderately sloping soils, with clayey subsoil, moderately deep.

Pacolet soils are well drained, moderately steep soils with clayey subsoil, moderately deep.

Tatum soils are dominantly sloping to steep, well drained to excessively drained soils, with a loamy subsoil, moderately deep or shallow to weathered rock.

Wilkes soils are dominantly strongly sloping to steep, well drained soils.

Winnsboro soils are well drained, gently sloping to steep, moderately deep to deep clayey soils.

Slope and Erodibility

The definition of soil erodibility differs from that of soil erosion. Soil erosion may be more influenced by slope, rainstorm characteristics, cover, and land management than by soil properties. Soil erodibility refers to the properties of the soil itself, which cause it to erode more or less easily than others when all other factors are constant.

The soil erodibility factor, K, is the rate of soil loss per erosion index unit as measured on a unit plot, and represents an average value for a given soil reflecting the combined effects of all the soil properties that significantly influence the ease of soil erosion by rainfall and runoff if not protected. K values closer to 1.0 represent higher soil erodibility and a greater need for best management practices to minimize erosion and contain those sediments that do erode. The range of K-factor values in the Broad River Basin is from 0.15 to 0.39.

Climate

Normal yearly rainfall in the Broad River area during the period of 1971 to 2000 was 47.52 inches, according to the S.C. historic climatological record. Data compiled from National Weather Service stations in Parr, Ninety Nine Islands, Spartanburg, Santuck, Chester, Winnsboro, Little Mountain, Columbia at U.S.C., and Columbia Metropolitan Airport were used to determine the general climate information for this portion of the State. The highest level of rainfall occurs in the summer with 13.22 inches; 10.73, 12.2, and 11.37 inches of rain falling in the fall, winter, and spring, respectively. The average annual daily temperature is 61.1 ^{o}F. Winter temperatures averaged 43.8^{o}F, spring temperatures averaged 60.6 ^{o}F and summer and fall mean temperatures were 77.9 ^{o}F and 61.9 ^{o}F, respectively.

Watershed Evaluations

03050105-05
(Broad River)

General Description

The South Carolina portion of 03050105-05 (formerly 03050105-050) is located in Cherokee and Spartanburg Counties and consists primarily of ***tributaries of the Broad River*** within South Carolina draining to North Carolina. The watershed occupies 69,106 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 49.3% forested land, 39.8% agricultural land, 6.6% urban land, 1.5% scrub/shrub land, 1.2% water, 1.0% forested wetland, and 0.6% barren land.

Before the Broad River flows across the South Carolina/North Carolina border it accepts drainage from several streams originating in South Carolina that flow into North Carolina including Arrowood Branch, Big Horse Creek (Little Horse Creek, Jolleys Lake), Suck Creek, and Ashworth Creek. There are a total of 100.3 stream miles and 43.8 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

There is currently no water quality sampling in this watershed.

Growth Potential

There is a low potential for growth in this watershed.

03050105-08

(Buffalo Creek)

General Description

The South Carolina portion of 03050105-08 (formerly 03050105-100) is located in Cherokee County and consists primarily of ***Buffalo Creek*** and its tributaries. The watershed occupies 17,309 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 50.6% forested land, 32.9% agricultural land, 13.1% urban land, 2.1% scrub/shrub land, 0.2% water, 1.0% forested wetland, and 0.1% barren land.

Bee Branch flows across the North Carolina border and drains into Buffalo Creek, which flows into the Broad River. There are a total of 21.0 stream miles and 6.6 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
B-740	BIO	FW	BUFFALO CREEK AT SC 198
B-119	S/W	FW	BUFFALO CREEK AT S-11-213, 2.2 MI NNW OF BLACKSBURG
B-057	S/INT	FW	BUFFALO CREEK AT SC 5, 1 MI W OF BLACKSBURG

Buffalo Creek – There are three SCDHEC monitoring stations along Buffalo Creek. At the furthest upstream site ***(B-740)***, aquatic life uses are fully supported based on macroinvertebrate community data. At the midstream site ***(B-119),*** aquatic life uses are fully supported, and a significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions. At the downstream site ***(B-057)***, aquatic life uses are partially supported due to occurrences of copper in excess of the aquatic life chronic criterion. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. A very high concentration of cadmium was measured in the 2004 sediment sample. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM / ***FACILITY NAME*** / ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** / ***TYPE*** / ***COMMENT***
BUFFALO CREEK SHARMA PETROLEUM PIPE #: 002 FLOW: 0.0075	SC0042196 MINOR INDUSTRIAL

BUFFALO CREEK TRIBUTARY B&W ENTERPRISE/BAILEY MINE PIPE #: 001 FLOW: M/R	SCG730484 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
MONSANTO TEXTILES CO. INDUSTRIAL	IWP-179 (SCD001700863) INACTIVE
LEIGH FIBERS LAND APPL. COTTON MOTE LAND APPLICATION	422634-8001 INACTIVE

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
B&W ENTERPRISE OF NORTH AMERICA INC. BAILEY MINE	1435-21 SAND

Growth Potential

There is a moderate potential for growth in this watershed, which contains a portion of the Town of Blacksburg. Major growth is expected along the I-85 corridor, which stretches across the watershed. Commercial growth is also associated with the I-85 corridor near the Town of Blacksburg.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Buffalo Creek** at water quality monitoring sites ***B-119*** and ***B-057***. The upper part of the watershed is in North Carolina. No currently active facilities that have fecal coliform limits in their NPDES permits discharge into the creek. The watershed is not within a Municipal Separate Storm Sewer System (MS4) designated area. Possible sources of fecal coliform bacteria in Buffalo Creek include out-of-state sources, leaking sewers, failing onsite wastewater disposal systems, urban residential runoff, pets, and wildlife. The TMDL specifies reductions in the load of fecal coliform bacteria into Buffalo Creek of 74% (B-119) and 72% (B-057) in order for the creek to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

03050105-09

(Kings Creek)

General Description

The South Carolina portion of 03050105-09 (formerly 03050105-120) is located in Cherokee and York Counties and consists primarily of ***Kings Creek*** and its tributaries. The watershed occupies 43,903 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 66.6% forested land, 22.1% agricultural land, 8.6% urban land, 1.8% scrub/shrub land, 0.7% water, 0.1% forested wetland, and 0.1% nonforested wetland.

Kings Creek originates in North Carolina and flows across the state line to accept drainage from Modlin Branch, Dixon Branch, Ponders Branch, Stonehouse Branch, Dellingham Branch, Mill Creek, and Jumping Branch. Further downstream, Garner Branch flows into Kings Creek followed by Manning Branch, Bells Branch, Beech Branch, Wolf Creek, and Nells Branch before draining into the Broad River. Kings Mountain National Military Park and Kings Mountain State Park are additional natural resources in the watershed. There are a total of 66.3 stream miles and 27.0 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
B-333	W/BIO/INT	FW	KINGS CREEK AT S-11-209, 3 MI W OF SMYRNA

Kings Creek (B-333) - Aquatic life uses are fully supported based on macroinvertebrate community data; however, there is a significant increasing trend in total nitrogen concentration. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-056	GB	SAPROLITE	BLACKSBURG-SHALLOW
AMB-077	GB	PIEDMONT BEDROCK	BLACKSBURG-DEEP

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
MILL CREEK TRIBUTARY VULCAN MATERIALS CO./BLACKSBURG PIPE #: 001, 002 FLOW: M/R	SCG730068 MINOR INDUSTRIAL

KINGS CREEK TAYLOR CLAY/GROVER MINE PIPE #: 001 FLOW: M/R	SCG730589 MINOR INDUSTRIAL
KINGS CREEK HANSON BRICK EAST/SERICITE MINE PIPE #: A-C FLOW: M/R	SCG730502 MINOR INDUSTRIAL
BELLS BRANCH TRIBUTARY CUNNINGHAM BRICK/MARTIN MINE PIPE #: 001 FLOW: M/R	SCG730546 MINOR INDUSTRIAL
MANNING BRANCH INDUSTRIAL MINERALS/KINGS CREEK PIPE #: 001 FLOW: M/R	SCG730499 MINOR INDUSTRIAL
KINGS CREEK TRIBUTARY EAGLE CONSTRUCTION/EM WATKINS PIT PIPE #: 001 FLOW: M/R	SCG730718 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
BLACKSBURG DUMP/ANTIOCH DOMESTIC	--------- CLOSED

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
HANSON AGGREGATES EAST LLC SERICITE PIT	0115-21 SERICITE
VULCAN CONSTRUCTION MATERIALS BLACKSBURG QUARRY	0354-21 LIMESTONE
TAYLOR CLAY PRODUCTS CO. ROBERTS MINE	0221-21 SHALE
TAYLOR CLAY PRODUCTS CO. GROVER MINE	0199-21 MANGANESE SCHIST
INDUSTRIAL MINERALS, INC. KINGS CREEK MINE	0162-21 SERICITE
CUNNINGHAM BRICK COMPANY, INC. MARTIN MINE	0810-21 MANGANESE SCHIST

Growth Potential

There is an overall low potential for growth in this watershed, which contains a portion of the Town of Smyrna. Duke Power built a natural gas-fired power plant, Mill Creek Combustion Turbine Station, near the top of the watershed in 2003, and it is expected to bring some growth to the area. Duke Power will buy water from the nearby Town of Blacksburg.

03050105-10

(Thicketty Creek)

General Description

Watershed 03050105-10 (formerly 03050105-130) is located in Cherokee County and consists primarily of ***Thicketty Creek*** and its tributaries. The watershed occupies 100,759 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 56.0% forested land, 29.7% agricultural land, 9.6% urban land, 2.2% scrub/shrub land, 1.6% forested wetland, 0.7% water, and 0.2% barren land.

Thicketty Creek joins with Macedonia Creek to form Lake Thicketty at the top of the watershed. Thicketty Creek then accepts drainage from Thicketty Mountain Creek (Linder Creek), Clary Creek, Allgood Branch, and Irene Creek (Cole Creek) near the City of Gaffney. Little Thicketty Creek (Lake Rufus, Rocky Ford Creek, Cowpens Creek) enters Thicketty Creek next followed by Limestone Creek (Mill Creek, Skelton Creek) and Big Blue Branch (Blue Branch). North Goucher Creek and South Goucher Creek join in Hammett Lake to form Goucher Creek (Gum Root Creek), which flows into Thicketty Creek downstream of Big Blue Branch. Jones Creek (Martin Lake) enters Thicketty Creek next followed by Timber Ridge Branch, Minkum Creek (Polecat Creek), Crocker Branch, Lusts Mill Creek, and Gilkey Creek. Gilkey Creek accepts drainage from Gaffney Country Club Lake, Blanton Creek, Peeler Branch, Spencer Branch (also known as Cartum Branch), Dry Fork Creek, Martin Branch, and Rocky Branch. Thicketty Creek drains into the Broad River. There are a total of 190.8 stream miles and 515.5 acres of lake waters in this watershed.

Surface Water Quality

Station #	Type	Class	Description
RL-02301	RL02	FW	LAKE THICKETTY NEAR SE SHORE APPROX. 1.0 MI FROM MACEDONIA
B-342	W	FW	LAKE THICKETTY IN FOREBAY NEAR DAM
RL-03457	RL03	FW	LAKE THICKETTY IN FOREBAY NEAR DAM (B-342)
B-059	S/W	FW	IRENE CREEK AT S-11-307, 2.5 MI W OF GAFFNEY
B-095	S/W	FW	THICKETTY CREEK AT S-11-164
RS-04376	BIO/RS04	FW	LITTLE THICKETTY CREEK AT S-42-307, 1.2 MI NE OF COWPENS
B-128	S/W	FW	LIMESTONE CREEK AT S-11-301
B-133	S/BIO/W	FW	THICKETTY CREEK AT SC 18, 8.3 MI S OF GAFFNEY
RS-01028	RS01	FW	THICKETTY CREEK AT S-11-104 BIG PINE HUNT CLUB, 9.0 MI E OF PACOLET
B-334	W/BIO	FW	GILKEY CREEK AT S-11-231, 9 MI SE OF GAFFNEY
B-062	S/INT	FW	THICKETTY CREEK AT SC 211, 2 MI ABOVE JUNCTION WITH BROAD RIVER

Lake Thicketty - There are three SCDHEC monitoring stations ***(RL-02301, B-342, RL-03457)*** along Lake Thicketty and aquatic life and recreational uses are fully supported for all sites. The 2003 sediment sample revealed a very high concentration of cadmium at ***RL-03457***, and a high concentration of chromium and copper. DDD, DDE (metabolites of DDT), and DDT were also

detected in the sediment sample. Although the use of DDT was banned in 1973, it is very persistent in the environment.

Irene Creek (B-059) **-** Aquatic life uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand and turbidity, and a significant decreasing trend in dissolved oxygen concentration. Recreational uses are not supported due to fecal coliform excursions.

Thicketty Creek – There are four SCDHEC monitoring stations along Thicketty Creek. At the furthest upstream site ***(B-095)***, aquatic life uses are fully supported, but recreational uses are partially supported due to fecal coliform bacteria excursions. Although there were pH violations at the next site downstream ***(B-133)***, aquatic life use is fully supported based on the macroinvertebrate data. There is also a significant increasing trend in five-day biochemical oxygen demand. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. Further downstream at ***RS-01028***, aquatic life and recreational uses are fully supported. At the furthest downstream site ***(B-062)***, aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life chronic criterion. There are also significant decreasing trends in dissolved oxygen concentration and increasing trends in five-day biochemical oxygen demand. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions.

Little Thicketty Creek (RS-04376) – Aquatic life uses are partially supported based on macroinvertebrate community data. A very high concentration of cadmium was measured in the 2004 sediment sample. Recreational uses are not supported due to fecal coliform bacteria excursions.

Limestone Creek (B-128) – Aquatic life uses are fully supported; however, there is a significant increasing trend in turbidity and a decreasing trend in dissolved oxygen concentration. Recreational uses are not supported due to fecal coliform bacteria excursions.

Gilkey Creek (B-334) – Aquatic life uses are partially supported based on macroinvertebrate community data. There are also significant increasing trends in five-day biochemical oxygen demand and total nitrogen concentration. Recreational uses are fully supported.

Natural Swimming Areas

FACILITY NAME	***PERMIT #***
RECEIVING STREAM	***STATUS***
CAMP LEA	11-N02
LAKE RUFUS	ACTIVE

NPDES Program

Active NPDES Facilities

RECEIVING STREAM / ***FACILITY NAME*** / ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** / ***TYPE*** / ***COMMENT***
THICKETTY CREEK CITY OF GAFFNEY/CLARY WWTP PIPE #: 001 FLOW: 5.0	SC0031551 MAJOR DOMESTIC
MILL CREEK HAMRICK MILLS/MUSGROVE MILLS PIPE #: 001 FLOW: M/R	SCG250168 MINOR INDUSTRIAL
SPENCER BRANCH BRIARCREEK SD II/UNITED UTILITIES PIPE #: 001 FLOW: 0.020	SC0026409 MINOR DOMESTIC
SPENCER BRANCH TRIBUTARY BRIARCREEK SD I/UNITED UTILITIES PIPE #: 001 FLOW: 0.020	SC0023736 MINOR DOMESTIC
JONES CREEK MEDLEY FARMS NPL SITE PIPE #: 001 FLOW: 0.029	SC0046469 MINOR INDUSTRIAL
IRENE CREEK TIMKEN COMPANY/GAFFNEY BEARING PIPE #: 001 FLOW: M/R	SCG250205 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME / ***FACILITY TYPE***	***PERMIT #*** / ***STATUS***
PIEDMONT INDUSTRIAL SERV. INDUSTRIAL	IWP-131 ----------

Land Application Sites

LAND APPLICATION SYSTEM / ***FACILITY NAME***	***ND#*** / ***TYPE***
SPRAYFIELD BLANTON'S SEPTIC	ND0080489 DOMESTIC

Mining Activities

MINING COMPANY / ***MINE NAME***	***PERMIT #*** / ***MINERAL***
JO DEAN LEMMONS K. LEMMONS	1496-21 SERICITE

Growth Potential

There is a moderate potential for growth in this watershed, which contains portions of the City of Gaffney and the Town of Cowpens. Major growth is expected along the I-85 corridor, which stretches across the watershed, particularly in the area north of Gaffney. U.S. Hwy. 29 and a rail line also cross the watershed from Spartanburg through Cowpens to Gaffney.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Thicketty Creek** and three tributaries – Irene Creek, Limestone Creek, and Gilkey Creek, at water quality monitoring sites ***B-059*** (Irene), ***B-128*** (Limestone), ***B-334*** (Gilkey), ***B-095, B-133***, and ***B-062***. Two currently active facilities that have fecal coliform limits in their NPDES permits discharge into Thicketty Creek and two facilities discharge into a tributary of Gilkey Creek. The watersheds of Irene and Limestone Creeks are within Municipal Separate Storm Sewer System (MS4) designated areas for the City of Gaffney. A very small part of the Thicketty Creek watershed is with a MS4 designated area for Cherokee County. Possible sources of fecal coliform bacteria in Irene and Limestone Creeks include MS4 runoff, leaking sewers, failing onsite wastewater disposal systems, pets, and wildlife. Possible sources in Thicketty and Gilkey Creeks include failing onsite wastewater disposal systems, cattle in creek, pets, and wildlife. The TMDL specifies reductions in the load of fecal coliform bacteria into Irene Creek of 70% (B-059), Limestone Creek of 72% (B-128), Gilkey Creek of 68% (B-334), Thicketty Creek of 68% (B-095), 49% (B-133), and 85% (B-062) in order for the creek to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

03050105-11

(Bullock Creek)

General Description

The South Carolina portion of 03050105-11 (formerly 03050105-140) is located in York County and consists primarily of ***Bullock Creek*** and its tributaries. The watershed occupies 77,423 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 70.2% forested land, 21.6% agricultural land, 4.6% urban land, 1.8% forested wetland, 1.5% scrub/shrub land, and 0.3% water.

Bullock Creek originates near the South Carolina/North Carolina border and accepts drainage from Gin Branch, Rocky Branch, Buckhorn Creek (Silver Creek), and Clark Fork. Clark Fork also originates near the state line and flows through Lake Crawford to join Jennings Branch and forms Lake York before accepting drainage from Biggers Branch and Saltlick Branch. Downstream of Clark Fork, Bullock Creek accepts drainage from Thompson Branch, Berry Branch, Purgatory Branch, Mitchell Branch, Plexico Branch, Loves Creek, and Bells Creek (Prater Branch, Dowdle Branch). Kings Mountain State Park extends over the upper portion of the watershed along with Kings Mountain National Military Park. There are 127.5 stream miles and 161.4 acres of lake waters in this watershed.

Surface Water Quality

Station #	Type	Class	Description
B-739	BIO	FW	BULLOCK CREEK AT S-46-40
B-325	S/W	FW	CLARK FORK INTO CRAWFORD LAKE NEAR SC 161 & 705
B-737	W	FW	LAKE YORK IN KINGS MOUNTAIN STATE PARK
B-326	S/W	FW	LONG BRANCH ON SC 216, BELOW KINGS MOUNTAIN PARK REC. AREA
B-157	BIO	FW	CLARK FORK AT S-46-63
B-159	S/INT	FW	BULLOCK CREEK AT SC 97, 4.8 MI S OF HICKORY GROVE

Bullock Creek – There are two SCDHEC monitoring stations along Bullock Creek. At the upstream site ***(B-739)***, aquatic life uses are fully supported based on macroinvertebrate community data. At the downstream site ***(B-159)***, aquatic life uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand and decreasing trends in dissolved oxygen concentration. Recreational uses are not supported due to fecal coliform bacteria excursions.

Clark Fork (B-325) – Aquatic life uses are partially supported due to dissolved oxygen excursions. Recreational uses are not supported due to fecal coliform bacteria excursions.

Lake York (B-737) - Aquatic life and recreational uses are fully supported.

Long Branch (B-326) – Aquatic life uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand and turbidity. Recreational uses are partially supported

due to fecal coliform bacteria excursions, which are compounded by a significant increasing trend in fecal coliform bacteria concentration.

Clark Creek (B-157) – Aquatic life uses are fully supported based on macroinvertebrate community data.

Natural Swimming Areas

FACILITY NAME / ***RECEIVING STREAM***	***PERMIT #*** / ***STATUS***
KINGS MOUNTAIN STATE PARK	46-N07
LAKE CRAWFORD	ACTIVE

NPDES Program

Active NPDES Facilities

RECEIVING STREAM / ***FACILITY NAME*** / ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** / ***TYPE*** / ***COMMENT***
LONG BRANCH	SC0025275
US PARK SERVICE/KINGS MTN NATL MIL PARK	MINOR INDUSTRIAL
PIPE #: 001 FLOW: M/R	

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME / ***FACILITY TYPE***	***PERMIT #*** / ***STATUS***
GREENEAGLE, INC.	PROPOSED
C&D	----------

Land Application Sites

LAND APPLICATION SYSTEM / ***FACILITY NAME***	***ND#*** / ***TYPE***
SPRAYFIELD	ND0080748
G & W INC.	INDUSTRIAL

Growth Potential

There is a low potential for growth in this watershed, which contains portions of the Towns of Hickory Grove, Smyrna, and Sharon. Public water service is limited to Hickory and Sharon. Although the area is largely rural, residential activity is increasing as a result of the close proximity to the Town of Clover, the City of York, and the Greater Charlotte Metropolitan Area.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Bullock Creek** at water quality monitoring site ***B-159***. Currently there is no active facility that has fecal coliform limits in its NPDES permit to discharge into the creek. None of the watershed is within a Municipal Separate Storm Sewer System (MS4) designated area. Possible sources of fecal coliform bacteria in Bullock Creek include upstream sources, failing onsite wastewater disposal systems, cattle in the creeks, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Bullock Creek of 48% in order for the creek to meet the recreational use standard.

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Clark Fork** and its tributary, **Long Branch**, at water quality monitoring sites ***B-325*** and ***B-326***. The upper part of the watershed is in North Carolina. No currently active facilities that have fecal coliform limits in their NPDES permits discharge into the creek. The watershed is not within a MS4 designated area. Possible sources of fecal coliform bacteria in Clark Fork and Long Branch include failing onsite wastewater disposal systems, out-of-state sources, pets, and wildlife. The TMDL specifies reductions in the load of fecal coliform bacteria into Clark Fork of 49% and Long Branch of 63% in order for the creek to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

03050105-12

(North Pacolet River)

General Description

The South Carolina portion of 03050105-12 (formerly 03050105-150) is located in Spartanburg County and consists primarily of the ***North Pacolet River*** and its tributaries. The watershed occupies 75,138 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 60.3% forested land, 24.2% agricultural land, 11.1% urban land, 2.2% forested wetland, 0.9% scrub/shrub land, 0.7% barren land, and 0.6% water.

The North Pacolet River originates in North Carolina and accepts drainage from Vaughn Creek (Lake Lanier) and Wolfe Creek, which originate in South Carolina. After flowing across the state line, the river accepts drainage from Page Creek. Hooper Creek, Collinsville Creek, and Bear Creek enter the river next; all originating in North Carolina. Obed Creek drains into the river at the base of the watershed. There are a total of 149.9 stream miles and 103.5 acres of lake waters in this watershed, all classified FW with the exception of Vaughn Creek, which is classified ORW.

Surface Water Quality

Station #	Type	Class	Description
B-099-7	BIO	ORW	VAUGHN CREEK AT UNNUMBERED ROAD, 0.4 MI S OF S-23-319
B-099A	S/W	FW	LAKE LANIER ON # 1 INLET IN GREENVILLE COUNTY
B-099B	S/W	FW	LAKE LANIER AT DAM IN GREENVILLE COUNTY
B-719	BIO	FW	NORTH PACOLET RIVER AT S-42-128
B-301	S/W	FW	PAGE CREEK AT S-42-1258, 1.7 MI SE LANDRUM
B-026	P/W	FW	NORTH PACOLET RIVER AT S-42-956, 6.5 MI E LANDRUM
B-126	W/INT	FW	NORTH PACOLET RIVER AT S-42-978, 1 MI SE OF FINGERVILLE
RS-03514	RS03/BIO	FW	OBED CREEK AT UNNUMBERED CHRISTOPHER RD OFF SC11
B-791	BIO	FW	OBED CREEK AT SR 42

Vaughn Creek (B-099-7) - Aquatic life uses are fully supported based on macroinvertebrate community data.

Lake Lanier – There are two SCDHEC monitoring stations along Lake Lanier. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter at both sites. At the uplake site ***(B-099A)***, aquatic life uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration. There is a significant increasing trend in pH. Recreational uses are fully supported at this site; however, there is a significant increasing trend in fecal coliform bacteria concentration. At the downlake site ***(B-099B)***, aquatic life and recreational uses are fully supported.

North Pacolet River – There are three SCDHEC monitoring stations along the North Pacolet River. At the furthest upstream site ***(B-719)***, aquatic life and recreational uses are fully supported. At the midstream site ***(B-026)***, aquatic life uses are fully supported; however, there is a significant

decreasing trend in dissolved oxygen concentration. There is a significant decreasing trend in pH. Significant decreasing trends in five-day biochemical oxygen demand, turbidity, total phosphorus concentration, and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are not supported at this site due fecal coliform bacteria excursions. At the downstream site ***(B-126)***, aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. There is a significant decreasing trend in pH. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters. Recreational uses are partially supported at this site due fecal coliform bacteria excursions.

Page Creek (B-301) - Aquatic life uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration. There is a significant decreasing trend in pH. Recreational uses are not supported due to fecal coliform bacteria excursions.

Obed Creek - There are two SCDHEC monitoring stations along Obed Creek. At the upstream site ***(RS-03514)***, aquatic life uses are partially supported based on macroinvertebrate community data. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions. At the downstream, site ***(B-791)***, aquatic life uses are fully supported based on macroinvertebrate community data.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME*** ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** ***TYPE*** ***COMMENT***
NORTH PACOLET RIVER SSSD/FINGERVILLE WWTP PIPE #: 001 FLOW: 0.020	SC0047759 MINOR DOMESTIC
NORTH PACOLET RIVER TRIBUTARY MILLIKEN & CO./NEW PROSPECT MILL PIPE #: 001 FLOW: M/R	SC0023540 MINOR INDUSTRIAL
NORTH PACOLET RIVER CITY OF LANDRUM/PAGE CREEK WWTP PIPE #: 001 FLOW: 1.0	SC0026875 MAJOR DOMESTIC
NORTH PACOLET RIVER LITTLE ACRES SAND CO./N. PACOLET MINE PIPE #: 001 FLOW: M/R	SCG730177 MINOR INDUSTRIAL

NORTH PACOLET RIVER TRIBUTARY VM HENSON/BIRD MOUNTAIN MINE PIPE #: 001 FLOW: M/R	SCG730598 MINOR INDUSTRIAL
NORTH PACOLET RIVER CHAPMAN GRADING/MCMILLAN MINE PIPE #: 001 FLOW: M/R	SCG730547 MINOR INDUSTRIAL

Nonpoint Source Management Program

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
LITTLE ACRES SAND CO. NORTH PACOLET RIVER MINE	1037-83 SAND
SLATER PROPERTIES NORTH PACOLET SAND	1001-83 SAND
CHAPMAN GRADING & CONCRETE CO. MCMILLAN MINE	0383-83 SAND & GRAVEL

Water Quantity

WATER USER ***STREAM***	***REGULATED CAPACITY (MGD)*** ***PUMPING CAPACITY (MGD)***
SWS LANDRUM WTP VAUGHN CREEK TRIBUTARY	0.2 0.2
SWS LANDRUM WTP LAKE LANIER - VAUGHN CREEK	1.0 2.0
TOWN OF TRYON, N.C. LAKE LANIER	6.0 9.0

Growth Potential

There is a low potential for growth in this watershed, which contains a portion of the City of Landrum. I-26 bisects the watershed and some growth may result around interstate interchanges.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in the **North Pacolet River** at water quality monitoring sites ***B-026*** and ***B-126***. Approximately 40% of the drainage to the North Pacolet watershed is in North Carolina. Currently The Town of Lyman operates a WWTP that discharges into the river. The North Pacolet River watershed is not within a Municipal Separate Storm Sewer System (MS4) designated area. Possible sources of fecal coliform bacteria into the North Pacolet River include out-of-state sources, cattle in creeks, failing onsite wastewater disposal systems, pets, and wildlife. The TMDL specifies reductions in the load of fecal coliform bacteria into the

North Pacolet River of 52% (B-026) and of 75% (B-126) in order for the river to meet the recreational use standard.

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Page Creek** at water quality monitoring site ***B-301***. No currently active facilities that have fecal coliform limits in their NPDES permits discharge into the creek. The watershed is not within a MS4 designated area. Possible sources of fecal coliform bacteria in Page Creek include leaking sewers, failing onsite wastewater disposal systems, urban residential runoff, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Page Creek of 62% in order for the creek to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

03050105-13

(South Pacolet River/Lake Bowen)

General Description

Watershed 03050105-13 (formerly 03050105-160) is located in Spartanburg County and consists primarily of the ***South Pacolet River*** and its tributaries. The watershed occupies 58,529 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 48.9% forested land, 31.5% agricultural land, 12.4% urban land, 3.7% water, 2.1% forested wetland, 0.9% scrub/shrub land, and 0.5% barren land.

The South Pacolet River originates near Glassy Mountain and accepts drainage from Green Creek, Belue Creek, Jamison Mill Creek, Spivey Creek (Clear Branch), and Motlow Creek (Easley Creek, Holston Creek) before forming Lake Bowen (Alexander Creek, Turkey Creek). The South Pacolet River flows out of Lake Bowen to then form the South Pacolet River Reservoir #1 (Mud Creek) which is also known as Spartanburg Reservoir #1. There are a total of 100.5 stream miles and 1,483.3 acres of lake waters in this watershed. With the exception of the headwaters of the South Pacolet River downstream to Hwy. 116, which is classified TN, all streams in the watershed are classified FW.

Surface Water Quality

Station #	Type	Class	Description
B-720	BIO	FW	SOUTH PACOLET RIVER AT S-42-183
B-103	S/W	FW	SPIVEY CREEK AT S-42-208, 2.5 MI SSE OF LANDRUM
B-790	BIO	FW	MOTLOW CREEK AT SR 888
B-302	S/INT	FW	SOUTH PACOLET RIVER AT S-42-866, 1 MI SE CAMPOBELLO
B-340	W	FW	LAKE BOWEN NEAR HEADWATERS, 0.4 KM W OF S-42-37
B-339	W/INT	FW	LAKE BOWEN IN FOREBAY NEAR DAM
B-113	S/W	FW	SPARTANBURG RESERVOIR #1 ON S-42-213 NE OF INMA

South Pacolet River - There are two SCDHEC monitoring stations along the South Pacolet River. At the upstream site ***(B-720)***, aquatic life uses are fully supported based on macroinvertebrate community data. Aquatic life uses are fully supported at the downstream site ***(B-302)***, and significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters. A very high concentration of cadmium was measured in the 2003 sediment sample Recreational uses are partially supported at this site due to fecal coliform bacteria excursions.

Spivey Creek (B-103) – Aquatic life uses are fully supported and a significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Motlow Creek (B-790) – Aquatic life uses are partially supported based on macroinvertebrate community data.

Lake Bowen **–** There are two SCDHEC monitoring stations along Lake Bowen. At the uplake site ***(B-340)***, aquatic life and recreational uses are fully supported. At the downlake site ***(B-339)***, aquatic life uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand, turbidity, total phosphorus concentration, and total nitrogen concentration. There is a significant decreasing trend in pH. Recreational uses are fully supported at this site; however, there is a significant increasing trend in fecal coliform bacteria concentration. *Fish tissue samples from Lake Bowen indicate no advisories are needed at this time.*

Spartanburg Reservoir #1 (B-113) **-** Aquatic life and recreational uses are fully supported and significant decreasing trends in five-day biochemical oxygen demand and turbidity suggest improving conditions for these parameters.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM / ***FACILITY NAME*** / ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** / ***TYPE*** / ***COMMENT***
MOTLOW CREEK LINKS O TRYON GOLF COMMUNITY PIPE #: 001 FLOW: 0.024	SC0042684 MINOR DOMESTIC
SOUTH PACOLET RIVER SPARTANBURG WATER SYSTEM WWTP/SIMMS WWTP PIPE #: 001 FLOW: 0.012 (PHASE II)	SC0030279 MINOR DOMESTIC
SOUTH PACOLET RIVER SPARTANBURG WATER SYSTEM/SIMMS WTP PIPE #: 001 FLOW: 1.17	SCG643002 MINOR DOMESTIC
SOUTH PACOLET RIVER LITTLE ACRES SAND CO./S.PACOLET MINE PIPE #: 001 FLOW: M/R	SCG730178 MINOR INDUSTRIAL
SPIVEY CREEK CITY OF LANDRUM/WTP PIPE #: 001 FLOW: 0.032	SCG645029 MINOR DOMESTIC

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME / ***FACILITY TYPE***	***PERMIT #*** / ***STATUS***
POTEAT SHORT TERM C&D LANDFILL C&D LANDFILL	422903-1301 ----------

Land Application Sites

LAND APPLICATION SYSTEM FACILITY NAME	*ND# TYPE*
SPRAYFIELD CAMPOBELLO-GRAMBLING SCHOOL	ND0067342 DOMESTIC

Mining Activities

MINING COMPANY MINE NAME	*PERMIT # MINERAL*
LITTLE ACRES SAND CO. SOUTH PACOLET RIVER MINE	0805-83 SAND
VM HENSON & BOBBY JENKINS BIRD MOUNTAIN MINE	1337-83 TOPSOIL
TIM BELUE BELUE MINE	1379-83 SAND; SAND/CLAY

Water Quantity

WATER USER STREAM	*REGULATED CAPACITY (MGD) PUMPING CAPACITY (MGD)*
SPARTANBURG WATER SYSTEM SOUTH PACOLET RIVER RES.#1	------- 64.0

Growth Potential

There is a low to moderate potential for growth in this watershed, which contains the Town of Campobello and a portion of the City of Landrum. I-26 bisects the watershed and some growth may result around interstate interchanges.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in the **South Pacolet River** at water quality monitoring sites ***B-302*** and ***B-113***. Currently Links Water LLC (SC0042684) operates one small WWTP on Motlow Creek a tributary of the river. The South Pacolet River watershed is partly within a Municipal Separate Storm Sewer System (MS4) designated area: Greenville County. Possible sources of fecal coliform bacteria into the South Pacolet River include MS4 runoff, cattle in creeks, failing onsite wastewater disposal systems, pets, and wildlife. The TMDL specifies reductions in the load of fecal coliform bacteria into the South Pacolet River of 68% (B-302) in order for the river to meet the recreational use standard. No reduction is cited for B-113.

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Spivey Creek** at water quality monitoring site ***B-103***. No currently active facilities that have fecal coliform limits in their NPDES permits discharge into the creek. The watershed is not within a MS4

designated area. Possible sources of fecal coliform bacteria in Spivey Creek include failing onsite wastewater disposal systems, urban residential runoff, leaking sewers, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Spivey Creek of 59% in order for the creek to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

03050105-14

(Lawsons Fork Creek)

General Description

Watershed 03050105-14 (formerly 03050105-180) is located in Spartanburg County and consists primarily of ***Lawsons Fork Creek*** and its tributaries. The watershed occupies 54,410 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 39.0% urban land, 33.5% forested land, 23.7% agricultural land, 2.1% forested wetland, 0.6% water, 0.6% barren land, and 0.5% scrub/shrub land.

Lawsons Fork Creek accepts drainage from Greene Creek (Meadow Creek), Camp Creek, Fawn Branch, Big Shoally Creek (Little Shoally Creek, Flatwood Lake, Fairview Lake), Betty Green Creek (Waldrops Lake), Chinquapin Creek, Halfway Branch, and Fourmile Branch before draining into the Pacolet River. There are a total of 88.7 stream miles and 145.2 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
B-221	S/W	FW	LAWSONS FORK CREEK AT S-42-40, BELOW INMAN MILL EFFLUENT
B-277	S/W	FW	LAWSONS FORK CREEK AT S-42-218, 2.7 MI SSE OF INMAN
B-278	S/W	FW	LAWSONS FORK CREEK AT UNNUMBERED ROAD BELOW MILLIKEN CHEMICAL
RS-02320	RS02	FW	MEADOW CREEK AT S-42-822
B-531	BIO	FW	MEADOW CREEK AT SR 56
BL-005	S/W	FW	LAWSONS FORK CREEK AT S-42-79 AT VALLEY FALLS
BL-001	P/BIO/INT	FW	LAWSONS FORK CREEK AT S-42-108

Lawsons Fork Creek – There are five SCDHEC monitoring stations along Lawsons Fork Creek. At the furthest upstream site ***(B-221)***, aquatic life uses are fully supported. Significant decreasing trends in five-day biochemical oxygen demand and turbidity suggest improving conditions for these parameters. There is a significant decreasing trend in pH. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. Further downstream ***(B-277)***, aquatic life uses are fully supported. Significant decreasing trends in five-day biochemical oxygen demand and increasing trends in dissolved oxygen concentration suggest improving conditions for these parameters. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. At the next site downstream ***(B-278)***, aquatic life uses are fully supported. Recreational uses are not supported at this site due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Further downstream ***(BL-005)***, aquatic life uses are fully supported and a significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter. At the furthest downstream site ***(BL-001)***, aquatic life uses are partially supported based

on macroinvertebrate community data. There are also significant increasing trends in total nitrogen concentration and total suspended solids. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Fluoranthenes were detected in the 2003 sediment sample. Recreational uses are not supported at this site due to fecal coliform bacteria excursions.

Meadow Creek - There are two SCDHEC monitoring stations along Meadow Creek. At the upstream site ***(RS-02320)***, aquatic life uses are fully supported, but recreational uses are not supported at this site due to fecal coliform bacteria excursions. At the downstream site ***(B-531)***, aquatic life uses are partially supported based on macroinvertebrate community data.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME*** ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** ***TYPE*** ***COMMENT***
LAWSONS FORK CREEK MILLIKEN & CO./DEWEY PLT PIPE #: 001 FLOW: 0.36	SC0003581 MAJOR INDUSTRIAL
LAWSONS FORK CREEK CITY OF INMAN PIPE #: 001 FLOW: 1.000 (PHASE II)	SC0021601 MINOR DOMESTIC
LAWSONS FORK CREEK INMAN MILLS WATER DISTRICT PIPE #: 001 FLOW: 0.175	SC0024414 MINOR DOMESTIC
MEADOW CREEK INMAN STONE COMPANY, INC. PIPE #: 001 FLOW: M/R	SCG730084 MINOR INDUSTRIAL
FOURMILE BRANCH MOTIVA ENTERPRISES LLC PIPE #: 001, 002 FLOW: M/R	SCG340001 MINOR INDUSTRIAL
FOURMILE BRANCH MAGELLAN TERMINALS/SPARTANBURG I PIPE #: 001, 002 FLOW: M/R	SCG340018 MINOR INDUSTRIAL
FOURMILE BRANCH MAGELLAN TERMINALS/SPARTANBURG II PIPE #: 001 FLOW: M/R	SCG340006 MINOR INDUSTRIAL
FOURMILE BRANCH BP PRODUCTS NORTH AMERICA/SPARTANBURG PIPE #: 001 FLOW: M/R	SCG340002 MINOR INDUSTRIAL

FOURMILE BRANCH	SCG340011
KINDER MORGAN SE TERM/SPARTANBURG	MINOR INDUSTRIAL
PIPE #: 001 FLOW: 0.051	
PIPE #: 002 FLOW: 0.428	

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
PAR GRADING & HAULING SHORT TERM C&D LANDFILL	422421-1301, 1701 (422627-1701) INACTIVE
BILL GARRETT INDUSTRIAL	IWP-184 INACTIVE
SOUTHERN WOOD PIEDMONT INDUSTRIAL	-------- INACTIVE
JIMMY WILSON CONSTRUCTION C&D	422647-1701 INACTIVE
HENSON'S MULCH & MORE WOODCHIPPING COMPOSTING	422766-3001 ACTIVE
JBR ENVIRONMENTAL SERVICES SWP-INDUSTRIAL	422673-2001 ACTIVE
NORTH AMERICAN ROCKWELL CORP. INDUSTRIAL	---------- INACTIVE
STOLTZ LAND CLEARING DEBRIS C&D	422422-1301, -1701 INACTIVE

Land Application Sites

LAND APPLICATION SYSTEM ***FACILITY NAME***	***ND#*** ***TYPE***
SPRAYFIELD KOHLER COMPANY	ND0000892 INDUSTRIAL

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
INMAN STONE COMPANY, INC. INMAN QUARRY	0630-83 GRANITE

Growth Potential

There is a high potential for growth in this watershed, which contains the City of Inman and a portion of the City of Spartanburg. Industrial growth in particular is expected along the I-85 corridor and major roads with I-85 interchanges. There are also industrial developmental pressures along I-26, U.S. Hwy. 29, and U.S. Hwy. 221.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Lawsons Fork Creek** at water quality monitoring sites ***B-221, B-277, B-278, BL-005***, and ***BL-001***. Currently there are two active facilities (City of Inman - SC0021601 and Inman Mills Water District - SC0024414) that have fecal coliform limits in their NPDES permits to discharge into Lawsons Fork Creek**.** Both of these facilities are in the upper end of the watershed. Also, the upper part of the watershed is within three Municipal Separate Storm Sewer System (MS4) designated areas: City of Inman, Spartanburg County, and City of Spartanburg. Possible sources of fecal coliform bacteria in Lawsons Fork Creek upstream of BL-005 include MS4 runoff, leaking sewers, failing onsite wastewater disposal systems, pets, and wildlife. Possible sources in lower Lawsons Fork Creek (BL-001) include upstream sources, failing onsite wastewater disposal systems, cattle in creek, pets, and wildlife. The TMDL specifies reductions in the load of fecal coliform bacteria into Lawsons Fork Creek of 81% (B-221), 70% (B-277), 70% (B-278), 70% (BL-005), and 77% (BL-001) in order for the creek to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

03050105-15

(Pacolet River)

General Description

The South Carolina portion of 03050105-15 (formerly 03050105-170, -190) is located in Spartanburg, Cherokee, and Union Counties and consists primarily of the ***Pacolet River*** and its tributaries. The watershed occupies 141,876 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 51.6% forested land, 32.6% agricultural land, 11.0% urban land, 1.9% forested wetland, 1.1% water, 1.0% scrub/shrub land, 0.8% barren land.

The Pacolet River is formed by the confluence of the North Pacolet River Watershed and the South Pacolet River Watershed. Downstream from the confluence, the Pacolet River accepts drainage from Thompson Creek and forms Lake Blalock. Streams draining into Lake Blalock include Buck Creek, Little Buck Creek (Ezell Branch, Cudds Creek, Greenes Lake), and Casey Creek (Carlisle Branch). Downstream from the lake, the Pacolet River accepts drainage from Cherokee Creek (Little Cherokee Creek), Island Creek (Zekial Creek, Double Branch), Pole Bridge Branch, Peters Creek, Cinder Branch, Turkey Hen Branch, Quinn Branch, and Mill Branch. Further downstream, the river accepts drainage from Richland Creek, Harvey Branch, Browns Branch, Plum Branch, and another Mill Branch. Mill Creek (Jumping Run Creek, Eison Branch) enters the river next, followed by Sandy Run Creek, Peter Hawks Creek, Gault Creek, another Mill Creek, another Gault Creek, Big Creek, Kendrick Branch, and Reedy Branch. The Pacolet River drains into the Broad River. Cowpens National Battlefield Site is located between Island Creek and Zekial Creek. There are a total of 230.1 stream miles and 1,069.7 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
B-028	S/W	FW	PACOLET R. AT S-42-55, BELOW CONFL. OF N. & S. PACOLET RIVERS
RL-02323	RL02	FW	LAKE BLALOCK AT S-42-43
B-783	BIO	FW	BUCK CREEK AT PEACH SHED RD
B-259	S/W	FW	LITTLE BUCK CREEK AT COUNTY ROAD, 2.3 MI SW OF CHESNEE
RL-01019	RL01	FW	LAKE BLALOCK, 4 MI SSW OF CHESNEE & 0.3 MI NE OF BUCK CK CHURCH
RL-03345	RL03	FW	LAKE BLALOCK , 0.1 MI SE OF BUCK CK CHURCH/ S-42-189
RL-04367	RL04	FW	LAKE BLALOCK , 0.9 MI UPLAKE OF US 221
RL-04389	RL04	FW	LAKE BLALOCK, 0.6 MI UPLAKE OF US 221
RL-04363	RL04	FW	LAKE BLALOCK , 0.3 MI UPLAKE OF US 221
RL-04461	RL04	FW	LAKE BLALOCK AT US 221
B-347	W	FW	LAKE BLALOCK IN FOREBAY NEAR DAM
B-163A	S/W	FW	PACOLET RIVER AT BRIDGE ON S-42-737, 2.9 MI NW OF COWPENS
B-191	S/W	FW	POTTER BRANCH ON ROAD 30, BELOW OUTFALL FROM HOUSING PROJECT
B-331	W/INT	FW	PACOLET RIVER AT S-42-59, BEACON LIGHT ROAD IN CLIFTON
BP-001	S/W	FW	PACOLET RIVER ABOVE DAM AT PACOLET MILLS
B-048	P/INT	FW	PACOLET RIVER AT SC 105, 6 MI ABOVE CONFLUENCE WITH BROAD RIVER

Pacolet River - There are five SCDHEC monitoring stations along the Pacolet River. At the furthest upstream site ***(B-028)***, aquatic life uses are fully supported. Significant decreasing trends in five-day biochemical oxygen demand, turbidity, total phosphorus concentration, and total suspended solids suggest improving conditions for these parameters. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter. Further downstream ***(B-163A)***, aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in total phosphorus concentration. There is a significant increasing trend in pH. Significant decreasing trends in five-day biochemical oxygen demand and turbidity, and increasing trends in dissolved oxygen concentration suggest improving conditions for these parameters.

At the next site downstream ***(B-331)***, aquatic life and recreational uses are fully supported. Significant decreasing trends in total phosphorus concentration and increasing trends in dissolved oxygen concentration suggest improving conditions for these parameters. Further downstream ***(BP-001)***, aquatic life uses are fully supported. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter. At the furthest downstream site ***(B-048)***, aquatic life uses are fully supported; however, there is a significant increasing trend in total nitrogen concentration and a significant decreasing trend in dissolved oxygen concentration. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Lake Blalock – There are eight SCDHEC monitoring stations along Lake Blalock. Aquatic life and recreational uses are fully supported at ***RL-02323, RL-01019, RL-04367, RL-04389, RL-04363, and B-347.*** A very high concentration of cadmium and high concentrations of chromium, nickel, and zinc were measured in the 2004 sediment sample at station ***RL-04367***. Endosulfan sulfate, DDD, DDE (metabolites of DDT), and DDT were also detected in the sediment sample. Although the use of DDT was banned in 1973, it is very persistent in the environment. Very high concentrations of cadmium, chromium, and nickel, and high concentrations of copper and zinc were measured in the 2004 sediment sample at station ***RL-04389***. Dieldrin and DDT were also detected in the sediment sample. A very high concentration of cadmium and high concentrations of chromium, nickel, and zinc were measured in the 2004 sediment sample at station ***RL-04363***. Endosulfan sulfate, dieldrin, DDD, DDE (metabolites of DDT), and DDT were also detected in the sediment sample at this site.

Aquatic life uses are fully supported at ***RL-03345.*** A very high concentration of cadmium was measured in the 2003 sediment sample. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions. Aquatic life uses are not supported at ***RL-04461*** due to

occurrences of copper in excess of the aquatic life chronic criterion. A very high concentration of cadmium and high concentrations of chromium and zinc were measured in the 2004 sediment sample. Endosulfan sulfate was also detected in the sediment sample. Recreational uses are fully supported at this site. *Fish tissue samples from Lake Blalock indicate no advisories are needed at this time.*

Buck Creek (B-783) – Aquatic life uses are fully supported based on macroinvertebrate community data.

Little Buck Creek (B-259) – Aquatic life uses are fully supported, and a significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are not supported due to fecal coliform bacteria excursions.

Potter Branch (B-191) – Aquatic life uses are partially supported due dissolved oxygen and pH excursions. Significant decreasing trends in five-day biochemical oxygen demand and total phosphorus concentration suggest improving conditions for these parameters. Recreational uses are partially supported due to fecal coliform bacteria excursions.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME*** ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** ***TYPE*** ***COMMENT***
PACOLET RIVER SSSD/CLIFTON WWTP PIPE #: 001 FLOW: 0.29	SC0042668 MINOR DOMESTIC
PACOLET RIVER INVISTA SARL/SPARTANBURG PIPE #: 001, 002 FLOW: M/R	SC0002798 MAJOR INDUSTRIAL
PACOLET RIVER SSSD/TOWN OF COWPENS/PACOLET RIVER PIPE #: 001 FLOW: 1.5	SC0045624 MAJOR DOMESTIC
PACOLET RIVER SSSD/FAIRFOREST REGIONAL WWTF PIPE #: 001 FLOW: 19.0 (25.0, 30.0)	SC0020435 MAJOR DOMESTIC
PACOLET RIVER SSSD/PACOLET MILLS WWTP PIPE #: 001 FLOW: 0.3	SC0044717 MINOR DOMESTIC
PACOLET RIVER CHAPMAN GRADING/CONVERSE MINE PIPE #: 001 FLOW: M/R	SCG730548 MINOR INDUSTRIAL
LITTLE CHEROKEE CREEK CITY OF SPARTANBURG/LAKE BLALOCK WTP PIPE #: 001 FLOW: M/R	SCG645010 MINOR DOMESTIC

LITTLE BUCK CREEK CITY OF CHESNEE/MAIN PLANT WWTP PIPE #: 001 FLOW: 0.500	SC0025763 MINOR DOMESTIC
LITTLE BUCK CREEK T GLENN EASLER GRADING & LANDSCAPING PIPE #: 001 FLOW: M/R	SCG730719 MINOR INDUSTRIAL
PETERS CREEK SSSD IDLEWOOD SD PIPE #: 001 FLOW: 0.08	SC0030554 MINOR DOMESTIC
PETERS CREEK T GLENN EASLER GRADING & LANDSCAPING PIPE #: 001 FLOW: M/R	SCG730720 MINOR INDUSTRIAL
PETERS CREEK TRIBUTARY AIR LIQUIDE INDUSTRIES PIPE #: 001 FLOW: M/R	SCG250046 MINOR INDUSTRIAL
ISLAND CREEK TALL TALES FISH CAMP PIPE #: 001 FLOW: 0.0136	SC0031577 MINOR DOMESTIC
PACOLET RIVER TRIBUTARY VULCAN MATERIALS CO./PACOLET QUARRY PIPE #: 001 FLOW: M/R	SCG730293 MINOR INDUSTRIAL
MILL CREEK WEAVETEX, INC. PIPE #: 001 FLOW: 0.006	SC0037371 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
IRENE BISHOP SHORT TERM C&D LANDFILL	422904-1301 INACTIVE
INVISTA S.A.R.L. SHORT TERM C&D LANDFILL	423312-1901 ACTIVE
BUD ARTHUR BRIDGE ROAD LF SHORT TERM C&D LANDFILL	422484-1301 ---
KOHLER CO. INDUSTRIAL LF INDUSTRIAL	422442-1601 ACTIVE
J. DAVID MOORE INERT IND. LANDFILL INDUSTRIAL	--- INACTIVE
J DAVID MOORE INERT IND. LANDFILL CONSTRUCTION	--- INACTIVE

ROBERT CHAPMAN SHORT TERM C&D LANDFILL	422908-1304 INACTIVE
RON HUGHS SHORT TERM C&D LANDFILL	012780-1301 ACTIVE
CONVERSE SHORT TERM SHORT TERM C&D LANDFILLS	422908-1301, -1302, -1303 INACTIVE
CLIFFDALE ROAD C&D C&D & YARD TRASH	422683-1701 ACTIVE
LANCASTER C&D & YT LANDFILL	422460-1701 INACTIVE
PACOLET RIVER PROPERTIES C&D LANDFILL	422677-1701, 422677-1301 INACTIVE
ARMSTRONG TEXTILES LAND APPLICATION	112723-8001 ACTIVE
TOWN OF JONESVILLE C&D LANDFILL	441002-1701 INACTIVE

Land Application Sites

LAND APPLICATION SYSTEM ***FACILITY NAME***	***ND#*** ***TYPE***
SPRAYFIELD SPARTANBURG WATER SYSTEM/SIMMS WTP	ND0074101 DOMESTIC
SPRAYFIELD SPARTANBURG WATER SYSTEM/LAKE BLALOCK WTP	ND0077135 DOMESTIC

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
CHAPMAN GRADING & CONCRETE CO., INC. CHAPMAN SAND PLANT #6	1081-83 SAND
DEATON SAND COMPANY DEATON SAND PIT	1016-83 SAND
T. GLEN EASLER GRADING & LANDSCAPING BLALOCK COVES MINE	1335-83 SAND; SAND/CLAY
T. GLEN EASLER GRADING & LANDSCAPING SHA LANE MINE	1438-83 SAND
VULCAN MATERIALS CO. PACOLET QUARRY	0062-83 GRANITE

Growth Potential

There is a low to moderate potential for growth in this watershed, which contains the City of Chesnee, the Town of Mayo, and portions of the City of Spartanburg and the Towns of Cowpens, Jonesville, and Pacolet. In addition to the Spartanburg area, growth is associated primarily with Chesnee, Cowpens, and Jonesville, which have sewer infrastructure. Industrial growth in particular is expected along the I-85 corridor and major roads with I-85 interchanges.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in the **Pacolet River** at water quality monitoring sites ***B-028, B-163A***, and ***B-331***. Currently there are several NPDES dischargers with fecal coliform bacteria limits in their permits on the Pacolet River, Peters Creek, and Island Creek. The Pacolet River watershed is within Municipal Separate Storm Sewer System (MS4) designated area for the Town of Cowpens and Spartanburg County. Possible sources of fecal coliform bacteria into the Pacolet River include upstream sources, MS4 runoff, failing onsite wastewater disposal systems, cattle in the creeks, pets, and wildlife. The TMDL specifies reductions in the load of fecal coliform bacteria into the Pacolet River of 74% (B-028) and of 73% (B-331) in order for the river to meet the recreational use standard. The TMDL does not specify a reduction for B-163A.

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in the **Pacolet River** at water quality monitoring sites ***BP-001*** and ***B-048***. The Spartanburg Sanitary Sewer District currently operates two WWTPs (SC0020435 and SC0044717) on the river. An industrial facility has operated on Mill Creek, a tributary. A small area of the watershed is within a MS4 designated area for Spartanburg County. Possible sources of fecal coliform bacteria in the Pacolet River include failing onsite wastewater disposal systems, cattle in the creeks, urban residential runoff, leaking sewers, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into the Pacolet River of 77% (BP-001) and 49% (B-048) in order for the river to meet the recreational use standard.

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Potter Branch** at water quality monitoring site ***B-191***. The Spartanburg Sanitary Sewer District currently operates a WWTP on the creek. The watershed is within two Municipal Separate Storm Sewer System (MS4) designated area: Town of Cowpens and Spartanburg County. Possible sources of fecal coliform bacteria in Potter Branch include MS4 runoff, failing onsite wastewater disposal systems, urban residential runoff, leaking sewers, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Potter Branch of 69% in order for the creek to meet the recreational use standard. Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

03050105-16

(Broad River)

General Description

The South Carolina portion of 03050105-16 (formerly 03050105-090, -110) is located in Cherokee and York Counties and consists primarily of the ***Broad River*** and its tributaries from the North Carolina border to the Pacolet River. The watershed occupies 105,590 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 51.2% forested land, 33.5% agricultural land, 10.5% urban land, 2.2% scrub/shrub land, 2.0% water, 0.5% forested wetland, 0.1% barren land.

After the Broad River crosses the state line, it accepts drainage from Goforth Creek, Ross Creek (Sarratt Creek), Mikes Creek, Morgan Creek, the Bowen River (Wylies Creek), and the Buffalo Creek Watershed. Further downstream, Cherokee Creek (Lake Whelchel, Allison Creek, Providence Creek) and Peoples Creek (Furnace Creek, Toms Branch) drain into the river near the City of Gaffney. Doolittle Creek enters the river next, near the Town of Blacksburg, followed by London Creek (Lake Cherokee, Little London Creek), Bear Creek, McKowns Creek, Dry Branch, the Kings Creek Watershed, and Quinton Branch. Mud Creek enters the river next, downstream of Mud Island, followed by Guyonmoore Creek, Mountain Branch, Abingdon Creek (Wolf Branch, Service Branch, Jenkins Branch), the Thicketty Creek Watershed, Beaverdam Creek (McDaniel Branch), the Bullock Creek Watershed, and Dry Creek (Nelson Creek). There are a total of 164.0 stream miles and 465.5 acres of lake waters in this watershed, all classified FW.

A fifteen mile segment of the Broad River, extending from Ninety Nine Islands Dam to the river's confluence with the Pacolet River is designated as a South Carolina State Scenic River in recognition of it's outstanding natural resources.

Surface Water Quality

Station #	Type	Class	Description
RS-03352	RS03	FW	ROSS CREEK AT S-11-63 (ELLIS FERRY RD), 6 MI N OF GAFFNEY
B-789	BIO	FW	ROSS CREEK AT SR 577
B-788	BIO	FW	BOWEN RIVER AT SR 83
B-042	P/INT	FW	BROAD RIVER AT SC 18, 4 MI NE GAFFNEY
B-088	S/W	FW	CANOE CREEK AT S-11-245, 2 MI W OF BLACKSBURG
RL-01029	RL01	FW	LAKE WHELCHEL, 2.7 MI N OF GAFFNEY
RL-03341	RL03	FW	L. WHELCHEL, 2.7 MI NE OF GAFFNEY, FROM GAFFNEY PUBLIC WORKS BOAT LANDING
B-056	INT	FW	CHEROKEE CREEK AT US 29, 3 MI E OF GAFFNEY
B-679	BIO	FW	CHEROKEE CREEK AT SC 329
B-211	S/W	FW	PEOPLES CREEK AT UNIMPROVED ROAD, 2.3 MI E OF GAFFNEY
B-100	S/W	FW	FURNACE CREEK AT S-11-50, 6 MI E OF GAFFNEY
B-323	S/W	FW	DOOLITTLE CREEK AT S-11-100, 1.25 MI SE OF BLACKSBURG
B-343	W	FW	LAKE CHEROKEE IN FOREBAY NEAR DAM
B-330	S/W	FW	GUYONMOORE CREEK AT S-46-233
RS-02482	RS02	FW	GUYONMOORE CREEK GOOSE HOLLOW RD FROM S-46-816 WOODEN BRIDGE
B-044	P/INT	FW	BROAD RIVER AT SC 211, 12 MI SE OF GAFFNEY

Ross Creek - There are two SCDHEC monitoring stations along Ross Creek. At the upstream site ***(RS-03352)***, aquatic life and recreational uses are fully supported. At the downstream site ***(B-789)***, aquatic life uses are fully supported based on macroinvertebrate community data.

Bowen River (B-788) – Aquatic life uses are fully supported based on macroinvertebrate community data.

Broad River – There are two SCDHEC monitoring stations along this section of the Broad River. At the upstream site ***(B-042)***, aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life chronic criterion. There are also significant increasing trends in five-day biochemical oxygen demand, total phosphorus concentration, and total nitrogen concentration. At the downstream site ***(B-044)***, aquatic life uses are fully supported; however, there are significant decreasing trends in dissolved oxygen concentration and increasing trends in five-day biochemical oxygen demand and total nitrogen concentration. Recreational uses are partially supported at both sites due to fecal coliform bacteria excursions; however, significant decreasing trends in fecal coliform bacteria concentration suggest improving conditions for this parameter at both sites. *Fish tissue samples from the Broad River indicate no advisories are needed at this time.*

Canoe Creek (B-088) – Aquatic life uses are fully supported, and there is a significant increasing trend in dissolved oxygen concentration. Recreational uses are not supported due to fecal coliform bacteria excursions, which are compounded by a significant increasing trend in fecal coliform bacteria. concentration

Lake Whelchel – There are two SCDHEC monitoring stations along Lake Whelchel. At the uplake site ***(RL-01029)***, aquatic life uses are not supported due to chlorophyll-a excursions. A very high concentration of cadmium was measured in the 2001 sediment sample. At the downlake site ***(RL-03341)***, aquatic life uses are partially supported due to pH excursions. The 2003 sediment sample revealed very high concentrations of cadmium and chromium, and a high concentration of nickel. DDD, DDE (metabolites of DDT), and DDT were detected in the sediment sample. Although the use of DDT was banned in 1973, it is very persistent in the environment. Recreational uses are fully supported at both sites.

Cherokee Creek - There are two SCDHEC monitoring stations along Cherokee Creek. At the upstream site ***(B-056)***, aquatic life and recreational uses are fully supported. Significant decreasing trends in total phosphorus concentration, total nitrogen concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters. At the downstream site ***(B-679)***, aquatic life uses are partially supported based on macroinvertebrate community data.

Peoples Creek – There are two SCDHEC monitoring stations along Peoples Creek. There is a significant decreasing trend in pH at both sites. At the upstream site ***(B-211)***, aquatic life uses are fully supported. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. At the downstream site ***(B-100)***, aquatic life uses are fully supported; however, there is an increasing trend in five-day biochemical oxygen demand. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. DDT was detected in the 2004 sediment sample. Although the use of DDT was banned in 1973, it is very persistent in the environment. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Doolittle Creek (B-323) – Aquatic life uses are fully supported; however, there is an increasing trend in five-day biochemical oxygen demand and a decreasing trend in dissolved oxygen concentration. There is a significant decreasing trend in pH. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Lake Cherokee (B-343) – Aquatic life and recreational uses are fully supported.

Guyonmoore Creek – There are two SCDHEC monitoring stations along Guyonmoore Creek. At the upstream site ***(B-330),*** aquatic life and recreational uses are fully supported; however, there is an increasing trend in five-day biochemical oxygen demand and a decreasing trend in dissolved oxygen concentration. A very high concentration of cadmium was measured in the 2004 sediment sample. Aquatic life and recreational uses are fully supported at the downstream site ***(RS-02482).***

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME*** ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** ***TYPE*** ***COMMENT***
BROAD RIVER SC DISTRIBUTORS INC. PIPE #: 001 FLOW: 0.04	SC0002755 MINOR DOMESTIC
BROAD RIVER MILLIKEN & CO./MAGNOLIA PLT PIPE #: 001 FLOW: 3.89	SC0003182 MAJOR INDUSTRIAL
BROAD RIVER COKER INTERNATIONAL LLC PIPE #: 001 FLOW: 0.0005	SC0035947 MAJOR INDUSTRIAL

BROAD RIVER CITY OF GAFFNEY/PEOPLES CREEK PLT PIPE #: 001 FLOW: 4.0	SC0047091 MAJOR DOMESTIC
BROAD RIVER TOWN OF BLACKSBURG/CANOE CREEK PLT PIPE #: 001 FLOW: 0.68	SC0047457 MINOR DOMESTIC
BROAD RIVER RAY BROWN/BROWN #3 SAND MINE PIPE #: 001 FLOW: M/R	SCG730542 MINOR INDUSTRIAL
BROAD RIVER THOMAS SAND/BLACKSBURG PIPE #: 001 FLOW: M/R	SCG730627 MINOR INDUSTRIAL
CHEROKEE CREEK CORE MOLDING TECHNOLOGIES PIPE #: 001 FLOW: M/R	SCG250199 MINOR INDUSTRIAL
CHEROKEE CREEK HANSON BRICKEAST/HIGGINS RED CLAY PIT PIPE #: 001 FLOW: M/R	SCG730504 MINOR INDUSTRIAL
CHEROKEE CREEK HANSON BRICK EAST/BROAD RIVER SHALE MINE PIPE #: 001, 002 FLOW: M/R	SCG730507 MINOR INDUSTRIAL
PEOPLES CREEK HAMRICK MILLS INC. PIPE #: 001 FLOW: M/R	SCG250167 MINOR INDUSTRIAL
PROVIDENCE BRANCH BPW/VICTOR GAFFNEY WTP PIPE #: 001 FLOW: 1.02	SCG645045 MINOR DOMESTIC

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
CITY OF GAFFNEY LANDFILL DOMESTIC	DWP-918; DWP-908 CLOSED
CITY OF GAFFNEY C/C LANDFILL DOMESTIC	111002-1201 ACTIVE
CHEROKEE COUNTY SW TRANSFER FAC. DOMESTIC	111001-6001 (SCD001411040) CLOSED
BLACKSBURG DUMP-METROMONT DOMESTIC	---------- CLOSED

CHEROKEE COUNTY COMPOSTING SITE COMPOSTING	111001-3001 ACTIVE
CHEROKEE COUNTY RECYCLING CENTER RECYCLING	111001-5001 ACTIVE
CHEROKEE COUNTY SHORT TERM C&D C&D	111001-1301 INACTIVE
DUKE POWER BURIAL SITE INDUSTRIAL	IWP-142 INACTIVE
CHEROKEE COUNTY LANDFILL DOMESTIC	111001-1101 CLOSED

Land Application Sites

LAND APPLICATION SYSTEM ***FACILITY NAME***	***ND#*** ***TYPE***
SPRAYFIELD PEELER RUG COMPANY	ND0070980 INDUSTRIAL

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
RANDOLPH BROAD RIVER PLANT BROAD RIVER PLANT	0042-21 SAND
THOMAS SAND COMPANY BLACKSBURG PLANT	0869-21 SAND
RAY BROWN ENTERPRIZES BROWN #3 SAND MINE	1070-21 SAND
HANSON BRICK EAST LLC HIGGINS RED CLAY PIT	0113-21 CLAY
HANSON BRICK EAST LLC SHALE PIT	0114-21 SHALE

Water Quantity

WATER USER ***STREAM***	***REGULATED CAPACITY (MGD)*** ***PUMPING CAPACITY (MGD)***
CITY OF GAFFNEY BPW BROAD RIVER	12.0 18.0
CITY OF GAFFNEY BPW LAKE WHELCHEL	---- 18.0

Growth Potential

There is a moderate potential for growth in this watershed, which contains portions of the Town of Blacksburg and the City of Gaffney. The City of Gaffney is planning for new subdivision growth by considering new regional treatment facilities near the Cherokee Creek-Broad River area. Major growth is expected along the I-85 corridor, particularly in the area north of Gaffney. Commercial growth is also associated with the I-85 corridor near the S.C. Hwy. 11 interchange north of Gaffney and at the S.C. Hwy. 105 interchange with the new outlet center. The potential for industrial growth exists along S.C. Hwy. 329 east of Gaffney due to an existing industrial park. Duke Power built a natural gas-fired power plant, Mill Creek Combustion Turbine Station in watershed 03040105-09 in 2003, and it is expected to bring some growth to the area. Duke Power will buy water from the nearby Town of Blacksburg.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in the **Broad River** at water quality monitoring sites ***B-042*** and ***B-044***. Currently there are several active facilities that have fecal coliform limits in their NPDES permits to discharge into the river. Though Peoples and Cherokee Creeks are partly within a Municipal Separate Storm Sewer System (MS4) designated area, none of the direct Broad River drainage is in a MS4. Possible sources of fecal coliform bacteria into the Broad River include failing onsite wastewater disposal systems, cattle in creeks, urban residential runoff, pets, and wildlife. The TMDL specifies reductions in the load of fecal coliform bacteria into the Broad River of 68% (B-042) and 53% (B-044) in order for the river to meet the recreational use standard.

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Peoples Creek** at water quality monitoring sites ***B-211*** and ***B-100***. No currently active facilities that have fecal coliform limits in their NPDES permits discharge into the creek. A small part of the watershed is within a MS4 designated area for the City of Gaffney. Possible sources of fecal coliform bacteria in Peoples Creek include leaking sewers, failing onsite wastewater disposal systems, urban residential runoff, pets, and wildlife. The TMDL specifies reductions in the load of fecal coliform bacteria into Peoples Creek of 81% (B-211) and 68% (B-100) in order for the creek to meet the recreational use standard.

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Cherokee Creek** at water quality monitoring site B-056. Currently there is one active facility that has fecal coliform limits in its NPDES permit to discharge into the creek. A small area of the watershed is within a MS4 designated area for the City of Gaffney. Possible sources of fecal coliform bacteria in Cherokee Creek include failing onsite wastewater disposal systems, urban residential runoff, leaking sewers, MS4 runoff, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Cherokee Creek of 76% in order for the creek to meet the recreational use standard.

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Canoe Creek** at water quality monitoring site ***B-088***. Currently there is no active facility that has fecal coliform limits in its NPDES permit to discharge into the creek. None of the watershed is within a MS4 designated area. Possible sources of fecal coliform bacteria in Canoe Creek include failing onsite wastewater disposal systems, urban residential runoff, leaking sewers, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Canoe Creek of 75% in order for the creek to meet the recreational use standard.

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Doolittle Creek** at water quality monitoring site ***B-323***. Currently there is no active facility that has fecal coliform limits in its NPDES permit to discharge into the creek. None of the watershed is within a MS4 designated area. Possible sources of fecal coliform bacteria in Doolittle Creek include failing onsite wastewater disposal systems, urban residential runoff, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Doolittle Creek of 70% in order for the creek to meet the recreational use standard.

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Guyonmoore Creek** at water quality monitoring site ***B-330***. Currently there is no active facility that has fecal coliform limits in its NPDES permit to discharge into the creek. None of the watershed is within a MS4 designated area. Possible sources of fecal coliform bacteria in Guyonmoore Creek include failing onsite wastewater disposal systems, cattle in the creeks, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Guyonmoore Creek of 65% in order for the creek to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

03050106-01

(Turkey Creek)

General Description

Watershed 03050106-01 (formerly 03050106-020) is located in York and Chester Counties and consists primarily of ***Turkey Creek*** and its tributaries. The watershed occupies 93,725 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 68.0% forested land, 22.1% agricultural land, 5.5% urban land, 2.0% forested wetland, 1.9% scrub/shrub land, 0.3% water, and 0.2% barren land.

Turkey Creek originates near the City of York, flowing out of Caldwell Lake and accepting drainage from Ross Branch (Lake Carolyn), Dry Fork, Little Turkey Creek (McClures Branch, Lindsey Creek), and Bryson Creek. Further downstream, Blue Branch enters Turkey Creek followed by Rainey Branch (Palmer Branch), Susybole Creek (Little Susybole Creek), Mill Creek (Rodens Creek), and McKelvy Creek. The lower tip of the watershed resides within the Sumter National Forest. There are a total of 192.9 stream miles and 100.5 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
B-086	S/W	FW	ROSS BRANCH AT SC 49, SW OF YORK
RS-03349	RS03	FW	SUSYBOLE CREEK AT S-46-59, 4 MI NW OF LOWRYS
B-136	W/BIO/INT	FW	TURKEY CREEK AT SC 9, 14 MI NW OF CHESTER

Ross Branch (B-086) – Aquatic life uses are not supported due to turbidity excursions. Recreational uses are not supported due to fecal coliform bacteria excursions.

Susybole Creek (RS-03349) – Aquatic life and recreational uses are fully supported. A very high concentration of cadmium was measured in the 2003 sediment sample.

Turkey Creek (B-136) – Aquatic life uses are partially supported based on macroinvertebrate community data. There is also a significant increasing trend in five-day biochemical oxygen demand. Recreational uses are not supported due to fecal coliform bacteria excursions.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
SUSYBOLE CREEK REA CONSTRUCTION CO./SUSYBOLE PIT #124 PIPE #: 001 FLOW: M/R	SCG730651 MINOR INDUSTRIAL
LITTLE SUSYBOLE CREEK HANSON AGGREGATES SE/LOWRY QUARRY PIPE #: 001 FLOW: M/R	SCG730085 MINOR INDUSTRIAL
SUSYBOLE CREEK TRIBUTARY MACK ESTATES PIPE #: 001 FLOW: 0.02	SC0043095 MINOR DOMESTIC
TURKEY CREEK REA CONSTRUCTION CO./123 TURKEY CREEK MINE PIPE #: 001 FLOW: M/R	SCG730655 MINOR INDUSTRIAL

Nonpoint Source Management Program

Landfill Facilities

LANDFILL NAME *FACILITY TYPE*	*PERMIT #* *STATUS*
CARTERS LANDSCAPE & FARMS INDUSTRIAL	---------- INACTIVE
CITY OF YORK COMPOSTING	461004-3001 INACTIVE

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
REA CONSTRUCTION CO. SAND PIT #123 - TURKEY CREEK MINE	0177-91 SAND
REA CONSTRUCTION CO. SAND PIT #124 - SUSYBOLE CREEK MINE	0180-23 SAND
HANSON AGGREGATES SE INC. LOWRYS QUARRY	0759-91 GRANITE

Water Quantity

WATER USER *STREAM*	*REGULATED CAPACITY (MGD)* *PUMPING CAPACITY (MGD)*
CITY OF YORK CALDWELL LAKE	1.0 4.1

CITY OF YORK	2.2
ROSS BRANCH TRIBUTARY - LAKE CAROLYN	4.0

Growth Potential

There is a low to moderate potential for growth in this watershed, which contains portions of the City of York and the Towns of Lowrys, Sharon, and McConnells. The City of York is located at the top of the watershed, and extends water and sewer service in and around the city. Residential and commercial development is expected to grow in these areas. The Sumter National Forest effectively excludes the lower tip of the watershed from development.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Ross Branch** at water quality monitoring site ***B-086***. There are no facilities that discharge into Ross Branch that have fecal coliform limits in their NPDES permits. There are no Municipal Separate Storm Sewer Systems (MS4) in the Ross Branch watershed. Possible sources of fecal coliform bacteria in Ross Branch identified in the TMDL include leaking sewers, failing onsite wastewater disposal systems, land application of manure, cattle watering in the creek, and pet and wildlife wastes. The TMDL specifies a reduction in the load of fecal coliform bacteria into Ross Branch of 99% in order for the creek to meet the recreational use standard.

A TMDL was also developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Turkey Creek** at water quality monitoring site ***B-136***. No currently active facilities that have fecal coliform limits in their NPDES permits discharge into the creek. Nor are there any Municipal Separate Storm Sewer System (MS4) designated areas in the Turkey Creek watershed. Possible sources of fecal coliform bacteria in Turkey Creek identified in the TMDL include failing onsite wastewater disposal systems, land application of manure, cattle watering in the creek, and wildlife wastes. The TMDL specifies a reduction in the load of fecal coliform bacteria into Turkey Creek of 39% in order for the creek to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

03050106-02

(Sandy River)

General Description

Watershed 03050106-02 is (formerly 03050106-040) located in Chester County and consists primarily of the ***Sandy River*** and its tributaries. The watershed occupies 104,556 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 64.9% forested land, 23.0% agricultural land, 6.0% urban land, 2.3% forested wetland, 1.6% scrub/shrub land, 1.6% barren land, and 0.6% water.

The Sandy River accepts drainage from Chapel Branch and flows through Chester Reservoir near the City of Chester. Downstream from the reservoir, Dry Fork enters the river followed by Caney Fork Creek (Chester State Park Lake, Twomile Branch, Threemile Branch), Carter Branch, Bear Branch (Mountain Lakes), and Seely Creek (Julies Fork, Walkers Mill Branch, Rock Branch, Bond Branch, Long Branch, Gum Spring Branch). Further downstream, the river accepts drainage from Rocky Branch, Brushy Fork Creek (Smith Creek, Starne Branch), the Little Sandy River (Mobley Creek, Coon Creek), and Johns Creek. Chester State Park is located in this watershed and extends over Twomile Branch and Threemile Branch near the City of Chester. There are a total of 208.7 stream miles and 444.8 lake acres in this watershed, all classified FW. The lower tip of the watershed resides within the Sumter National Forest.

Surface Water Quality

Station #	Type	Class	Description
B-074	S/W	FW	DRY FORK AT S-12-304, 2 MI SW OF CHESTER
CL-023	W	FW	CHESTER STATE PARK LAKE, 100 M E OF SPILLWAY
B-075	S/BIO/INT	FW	SANDY RIVER AT SC 215, 2.5 MI ABOVE CONFLUENCE WITH BROAD RIVER

Dry Fork (B-074) – Aquatic life uses are partially supported due to dissolved oxygen excursions. There are also significant decreasing trends in dissolved oxygen concentration and increasing trends in five-day biochemical oxygen demand. Very high concentrations of chromium and nickel were measured in the 2004 sediment sample. Recreational uses are not supported due to fecal coliform bacteria excursions.

Chester State Park Lake (CL-023) – Aquatic life and recreational uses are fully supported.

Sandy River (B-075) – Aquatic life uses are fully supported; however, there are significant decreasing trends in dissolved oxygen concentration and increasing trends in five-day biochemical oxygen demand and total nitrogen concentration. There is a significant decreasing trend in pH. Recreational uses are not supported due to fecal coliform bacteria excursions.

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-110	GB	PIEDMONT BEDROCK	CHESTER STATE PARK

NPDES Program

Active NPDES Facilities

RECEIVING STREAM	***NPDES#***
FACILITY NAME	***TYPE***
PERMITTED FLOW @ PIPE (MGD)	***COMMENT***
SANDY RIVER	SC0036081
CITY OF CHESTER/SANDY RIVER WWTP	MAJOR DOMESTIC
PIPE #: 001 FLOW: 2.133	

Nonpoint Source Management Program

Land Disposal Activities

Landfill Activities

SOLID WASTE LANDFILL NAME	***PERMIT #***
FACILITY TYPE	***STATUS***
CITY OF CHESTER SANITARY LANDFILL	DWP-069 (SCD002394070)
DOMESTIC	CLOSED
CITY OF CHESTER COMPOSTING LANDFILL	121003-3001
COMPOSTING	ACTIVE

Land Application Sites

LAND APPLICATION SYSTEM	***ND#***
FACILITY NAME	***TYPE***
PERCOLATION LAGOON	ND0080535
HILLTOP MOBILE HOME PARK	DOMESTIC

Mining Activities

MINING COMPANY	***PERMIT #***
MINE NAME	***MINERAL***
CHESTER COUNTY	1128-23
CHESTER COUNTY GRAVEL PIT	GRAVEL

Growth Potential

There is a low to moderate potential for growth in this watershed, which contains the City of Chester and a portion of the Town of Lowrys. Water and sewer services are provided in and around Chester and will promote modest residential, commercial, and industrial growth. The majority of the watershed is rural in nature with a high degree of forestry activities. The Sumter National Forest effectively excludes the western edges of the watershed from development.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Sandy River** at water quality monitoring site ***B-075*** and its tributary, Dry Fork at ***B-074***. There are no facilities that have fecal coliform limits in their NPDES permits that discharge into Dry Fork. Chester Sewer District - Sandy River WWTP (SC0036081) discharges into the Sandy River. There are no Municipal Separate Storm Sewer Systems (MS4) in either part of the watershed. Possible sources of fecal coliform bacteria in Dry Fork, identified in the TMDL, include residential stormwater runoff, leaking sewers, SSOs, failing onsite wastewater disposal systems, pets, and wildlife. Possible sources of fecal coliform bacteria in Sandy River, identified in the TMDL, include failing onsite wastewater disposal systems, land application of manure, cattle in the creeks, and wildlife. The TMDL specifies reductions in the load of fecal coliform bacteria into Dry Fork of 90% and into Sandy River of 73% in order for the streams to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

03050106-03

(Broad River)

General Description

Watershed 03050106-03 (formerly 03050106-010, -030) is located in Union, Chester, and Fairfield Counties and consists primarily of the ***Broad River*** and its tributaries from the Pacolet River to the Tyger River. The watershed occupies 111,273 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 64.7% forested land, 23.2% agricultural land, 5.2% urban land, 3.0% forested wetland, 1.6% barren land, 1.6% water, and 0.7% scrub/shrub land.

This section of the Broad River accepts drainage from its upper reach, together with Robertson Branch, Fanning Creek (Sharps Creek), George Branch, Osborn Branch, the Turkey Creek Watershed, and Hughes Creek (Lake John D. Long, Vanderford Branch). Big Browns Creek (Knox Creek, Bethlehem Creek, Meng Creek) merges with Little Browns Creek to form Browns Creek (Gregorys Creek) and flows into the Broad River, followed by McCluney Creek, Little Turkey Creek, Clarks Creek, Neals Creek (Hobsons Creek), Mineral Creek, Coxs Creek, and the Sandy River Watershed. The lower three-quarters of the watershed, below Turkey Creek, resides within the Sumter National Forest. There are a total of 218.2 stream miles and 209.4 acres of lake waters, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
RL-01010	RL01	FW	LAKE LONG, 7.75 MI NE OF UNION & 3.5 MI W OF SUMTER NAT'L FOREST
B-344	W	FW	LAKE JOHN D. LONG IN FOREBAY NEAR DAM
B-243	S	FW	TRIBUTARY TO MENG CREEK AT CULVERT ON S-44-384, 3 MI E OF UNION
B-064	S	FW	MENG CREEK AT SC 49, 2.5 MI E OF UNION
B-155	W/BIO	FW	BROWNS CREEK AT S-44-86, 8 MI E OF UNION
B-335	W	FW	GREGORYS CREEK AT S-44-86, 8 MI E OF UNION
RS-04543	RS04	FW	CLARKS CREEK AT USFS RD 305 IN WOODS FERRY PK, 13 MI W OF CHESTER
B-778	BIO	FW	NEALS CREEK AT SR 86
B-046	P	FW	BROAD RIVER AT SC 72/215/121, 3 MI E OF CARLISLE

Lake John D. Long – There are two SCDHEC monitoring sites along Lake Long ***(RL-01010, B-344)***. Aquatic life and recreational uses are fully supported at both sites. A very high concentration of cadmium was measured in the 2001 sediment sample at ***RL-01010***.

Meng Creek Tributary (B-243) – Aquatic life uses are partially supported due to pH excursions. Significant increasing trends in dissolved oxygen concentration and decreasing trends in five-day biochemical oxygen demand, total phosphorus concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions.

Meng Creek (B-064) – Aquatic life uses are partially supported due to pH excursions. There is also a

significant increasing trend in five-day biochemical oxygen demand. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. Recreational uses are not supported due to fecal coliform bacteria excursions.

Browns Creek (B-155) – Aquatic life uses are partially supported based on macroinvertebrate community data. There is also a significant increasing trend in five-day biochemical oxygen demand. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Gregorys Creek (B-335) – Aquatic life and recreational uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand and total nitrogen concentration.

Clarks Creek (RS-04543) – Aquatic life uses are fully supported, but recreational uses are not supported due to fecal coliform bacteria excursions.

Neals Creek (B-778) – Aquatic life uses are fully supported based on macroinvertebrate community data.

Broad River (B-046) – Aquatic life uses are partially supported due to occurrences of copper in excess of the aquatic life chronic criterion. There is also a significant decreasing trend for dissolved oxygen concentration. There is a significant decreasing trend for pH. A very high concentration of cadmium was measured and dibutyl phthalate was detected in the 2004 sediment sample. Recreational uses are partially supported due to fecal coliform bacteria excursions. *Fish tissue samples from the Middle Tyger River indicate no advisories are needed at this time.*

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME*** ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** ***TYPE*** ***COMMENT***
BROAD RIVER CONE MILLS/CARLISLE PLT PIPE #: 001 FLOW: 2.64	SC0001368 MAJOR INDUSTRIAL
BROAD RIVER SCE&G/NEAL SHOALS HYDRO PIPE #: 001 FLOW: 0.056	SC0002186 MINOR INDUSTRIAL
BROAD RIVER LOCKHART TREATMENT FACILITY PIPE #: 001 FLOW: 0.169	SC0003051 MINOR DOMESTIC
BROAD RIVER CHEMTRADE PERF. CHEM./LEEDS PLT PIPE #: 001 FLOW: 0.041	SC0022756 MINOR INDUSTRIAL

BROAD RIVER MCINTYRE SAND/JORDAN FOWLER PIPE #: 001 FLOW: M/R	SCG730619 MINOR INDUSTRIAL
BROAD RIVER MCINTYRE SAND/ASKEW MINE PIPE #: 001 FLOW: M/R	SCG730620 MINOR INDUSTRIAL
BROAD RIVER MCINTYRE SAND/NEAL SHOALS MINE PIPE #: 001 FLOW: M/R	SCG730621 MINOR INDUSTRIAL
BIG BROWNS CREEK CITY OF UNION/MENG CREEK PLANT PIPE #: 001 FLOW: 1.0	SC0047236 MAJOR DOMESTIC
MENG CREEK CITY OF UNION/WTP PIPE #: 001 FLOW: 0.062	SCG645028 MINOR DOMESTIC

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
BENNETT ISW LANDFILL INDUSTRIAL	122493-1601 ACTIVE
BENNETT COMPOSTING LANDFILL COMPOSTIING	122493-3002 INACTIVE
BENNETT LANDFILL INDUSTRIAL	122900-1301 INACTIVE
BENNETT C&D LANDFILL CONSTRUCTION	122493-1701 INACTIVE
UNION COUNTY SANITARY LANDFILL DOMESTIC	DWP-902 (DWP-116, DWP-049) CLOSED
UNION COUNTY SANITARY LANDFILL DOMESTIC	441001-1101 CLOSED
UNION COUNTY C&D LANDFILL CONSTRUCTION	441001-1201 INACTIVE
UNION COUNTY TRANSFER STATION TRANSFER	441001-6001 INACTIVE
PRESSLEY C&D LANDFILL INDUSTRIAL	122493-1601 ACTIVE

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
MCINTYRE SAND CO., INC. CUDD SAND MINE	0909-87 SAND
MCINTYRE SAND CO., INC. JORDAN FOWLER TRACT	1243-87 SAND
MCINTYRE SAND CO., INC. ASKEW MINE	0684-87 SAND
MCINTYRE SAND CO., INC. NEAL SHOALS MINE	1382-87 SAND
SLOAN CONSTRUCTION CO., INC. LOCKHART MINE	0471-87 SAND
UNION COUNTY CARLISLE PIT	0311-23 SAND

Water Quantity

WATER USER *STREAM*	*REGULATED CAPACITY (MGD)* *PUMPING CAPACITY (MGD)*
CITY OF UNION BROAD RIVER	10.4 23.8
CARLISLE CONE MILLS BROAD RIVER	6.2 8.4

Growth Potential

There is a low potential for future growth in this watershed, which contains the Town of Lockhart and portions of the Town of Carlisle, the City of Union, and the unincorporated Monach Mill Village. Public water and sewer services are available in Carlisle and around Union. The area should continue to experience scattered residential development. The Sumter National Forest effectively excludes a large portion of the watershed from development.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in the section of the **Broad River** ending near Carlisle at water quality monitoring site ***B-046***. There are three facilities that have fecal coliform limits in their NPDES permits that discharge into this section of the Broad River. These are the Lockhart WWTP (SC0003051), Chemtrade Performance Chemicals/Leeds (SC0022756), and Cone Mills Corp – Carlisle Plant (SC0001368). There are no Municipal Separate Storm Sewer System (MS4) designated areas in this section of the watershed.

Possible sources of fecal coliform bacteria in this part of the Broad River, identified in the TMDL, include failing onsite wastewater disposal systems, land application of manure, cattle watering in the creeks, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into the Broad River above B-046 of 62% in order for the river to meet the recreational use standard.

A TMDL was also developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Browns Creek** at water quality monitoring site ***B-155***. One facility that has fecal coliform limits in its NPDES permit (Union County Meng Creek WWTP SC0047236) discharges into Browns Creek. There are no Municipal Separate Storm Sewer System (MS4) designated areas in the watershed. Possible sources of fecal coliform bacteria in Browns Creek, identified in the TMDL, include residential stormwater runoff, leaking sewers, failing onsite wastewater disposal systems, SSOs, cattle watering in the creek, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Browns Creek of 9% in order for the creek to meet the recreational use standard.

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Gregorys Creek** at water quality monitoring site ***B-335***. This watershed is mostly on private land within the Sumter National Forest and is almost entirely forested. No facilities that have fecal coliform limits in their NPDES permits discharge into the creek. Nor are there any Municipal Separate Storm Sewer System (MS4) designated areas in the Gregorys Creek watershed. Possible sources of fecal coliform bacteria in Gregorys Creek, identified in the TMDL, include failing onsite wastewater disposal systems and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Gregorys Creek of 39% in order for the creek to meet the recreational use standard.

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Meng Creek** at water quality monitoring sites ***B-064*** and in a Meng Creek tributary at ***B-243***. No currently active facilities that have fecal coliform limits in their NPDES permits discharge into the creek. Nor are there any Municipal Separate Storm Sewer System (MS4) designated areas in the Meng Creek watershed. Possible sources of fecal coliform bacteria in both Meng Creek and its tributary, identified in the TMDL, include residential stormwater runoff, leaking sewers, failing onsite wastewater disposal systems, pets and wildlife. Additionally, sanitary sewer overflows (SSOs) are identified as a possible source for Meng Creek. The TMDL specifies reductions in the load of fecal coliform bacteria into Meng Creek of 91% and the Meng Creek tributary of 94% in order for the creeks to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

03050106-04

(Broad River)

General Description

Watershed 03050106-04 (formerly 03050106-050) is located in Newberry and Fairfield Counties and consists primarily of the ***Broad River*** and its tributaries from the Tyger River to the Parr Shoals dam. The watershed occupies 146,192 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 65.3% forested land, 18.1% agricultural land, 4.7% urban land, 2.7% forested wetland, 7.1% water, 1.4% barren land, and 0.7% scrub/shrub land.

This section of the Broad River accepts drainage from its upper reaches, together with the Tyger River Watershed, the Enoree River Watershed, Beaver Creek (McClures Creek, Chicken Creek, Storm Branch, Reedy Branch, Sandy Fork), Rocky Creek, and Terrible Creek. The Parr Shoals dam impounds the Broad River to form Parr Reservoir, which accepts drainage from Hellers Creek (Second Creek, Buck Branch) and Cannons Creek (Rocky Branch, Kerr Creek, Charles Creek, Mud Creek). Monticello Reservoir is connected to Parr Reservoir by Frees Creek. The Sumter National Forest and the Broad River Waterfowl Area are natural resources in the watershed. There are a total of 242.6 stream miles and 8,498.3 acres of lake waters, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
RS-04527	RS04/BIO	FW	McClures Creek at SC 215, 6.7mi SE of Carlisle
B-143	BIO	FW	Beaver Creek at SR 95
B-047	S/W	FW	Broad River at SC 34, 14 mi NE of Newberry
B-151	BIO	FW	Hellers Creek at SR 97
B-346	W	FW	Parr Reservoir 4.8 km N of Dam, upstream of Monticello Reservoir
B-831	BIO	FW	Cannons Creek at Oxner Road
B-751	BIO	FW	Cannons Creek at US 176
B-328	P/W	FW	Monticello Res., upper impoundment at Buoy in middle of lake
RL-04370	RL04	FW	Monticello Res., 1.7 mi NW of Monticello
B-327	P/INT	FW	Monticello Reservoir, lower impoundment between large islands
RL-04374	RL04	FW	Monticello Res., 3.57 mi N of Jenkinsville
RS-03343	RS03	FW	Mud Creek at Moore Branch Road off SC 219, 0.5 mi SE S-36-499
B-345	W/INT	FW	Parr Reservoir in forebay near dam

McClures Creek (RS-04527) – Aquatic life uses are partially supported based on macroinvertebrate community data. Dibutyl phthalate was detected in the 2004 sediment sample. Recreational uses are not supported due to fecal coliform bacteria excursions.

Beaver Creek (B-143) - Aquatic life uses are partially supported based on macroinvertebrate community data.

Broad River (B-047) – Aquatic life and recreational uses are fully supported. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. There is a significant increasing trend in pH. *Fish tissue samples from the Broad River indicate no advisories are needed at this time.*

Hellers Creek (B-151) - Aquatic life uses are partially supported based on macroinvertebrate community data.

Parr Reservoir - There are two SCDHEC monitoring stations along Parr Reservoir and recreational uses are fully supported at both sites. At the uplake site ***(B-346)***, aquatic life uses are not supported due to total phosphorus excursions. At the downlake site ***(B-345)***, aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life chronic criterion. There is also a significant increasing trend in five-day biochemical oxygen demand. *Fish tissue samples from Parr Reservoir indicate no advisories are needed at this time.*

Cannons Creek - There are two SCDHEC monitoring stations along Cannons Creek. At the upstream site ***(B-831)***, aquatic life uses are partially supported based on macroinvertebrate community data. At the downstream site ***(B-751)***, aquatic life uses are fully supported based on macroinvertebrate community data.

Monticello Reservoir – There are four SCDHEC monitoring stations along Monticello Reservoir. At the furthest uplake site ***(B-328)***, aquatic life and recreational uses are fully supported. Significant decreasing trends in five-day biochemical oxygen demand, turbidity, total phosphorus concentration, total nitrogen concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters. There is a significant increasing trend in pH at this site. At the next site downlake site ***(RL-04370)***, aquatic life and recreational uses are fully supported. A very high concentration of cadmium was measured in the 2004 sediment sample. Benzoic acid, DDD, and DDE (metabolites of DDT) were also detected in the sediment sample. Although the use of DDT was banned in 1973, it is very persistent in the environment. Further downlake ***(B-327)***, aquatic life uses are partially supported due to pH excursions. There is a significant increasing trend in pH. Recreational uses are fully supported and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter. At the furthest downlake site ***(RL-04374)***, aquatic life and recreational uses are fully supported. Very high concentrations of cadmium and nickel, and high concentrations of chromium, copper, and zinc were measured in the 2004 sediment sample. Benzoic acid, bis(n-octyl) phthalate, DDT, and DDE (a metabolite of DDT) were also detected in the sediment sample. *Fish tissue samples from Monticello Reservoir indicate no advisories are needed at this time.*

Mud Creek (RS-03343) - Aquatic life uses are fully supported, but recreational uses are not supported due to fecal coliform bacteria excursions.

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-065	GB	PIEDMONT BEDROCK	EAST CENTRAL NEWBERRY
AMB-060	GB	PIEDMONT BEDROCK	JENKINSVILLE #4
AMB-066	GB	PIEDMONT BEDROCK	NEWBERRY COUNTY MAINTAIN
AMB-080	GB	PIEDMONT BEDROCK	NEWBERRY BORED
AMB-069	GB	SAPROLITE	NEWBERRY BORED

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME*** ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** ***TYPE*** ***COMMENT***
MONTICELLO RESERVOIR SCE&G/SUMMER NUCLEAR STA. PIPE #: 001 (002, 004-011, 015, 016) FLOW: 682.2 PIPE #: 014 FLOW: 0.504	SC0030856 MAJOR INDUSTRIAL
BROAD RIVER SCE&G/SUMMER NUCLEAR STA. PIPE #: 003 FLOW: 0.0044 PIPE #: 012 FLOW: 0.028	SC0030856 MAJOR INDUSTRIAL
PARR RESERVOIR SCE&G/FAIRFIELD PUMPED STORAGE PIPE #: 001 FLOW: 0.26 PIPE #: 002 FLOW: 3.6 PIPE #: 003 FLOW: 0.072	SC0035904 MINOR INDUSTRIAL
CANNONS CREEK NCW&SA/BROAD RIVER WWTP PIPE #: 001 FLOW: 0.05	SC0048020 MINOR DOMESTIC TO BE ELIMINATED
CANNONS CREEK NCW&SA/CANNONS CREEK WWTP PIPE #: 001 FLOW: 0.95	SC0048313 MINOR DOMESTIC
CHARLES CREEK FOREST HILLS SD/ELBO INC. PIPE #: 001 FLOW: 0.02	SC0024571 MINOR DOMESTIC
ROCKY CREEK VULCAN MATERIALS CO./BLAIR QUARRY PIPE #: 001, 002 FLOW: M/R	SCG730053 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Activities

SOLID WASTE LANDFILL NAME *FACILITY TYPE*	*PERMIT #* *STATUS*
NEWBERRY COUNTY LANDFILL DOMESTIC	DWP-117 CLOSED
NEWBERRY COUNTY LANDFILL DOMESTIC	361001-3002 CLOSED
NEWBERRY COUNTY LANDFILL COMPOSTING	361001-3001 ACTIVE
NEWBERRY COUNTY TRANSFER STATION DOMESTIC	361001-6001 ACTIVE
CITY OF NEWBERRY COMPOSTING	361002-3001 ACTIVE
DILLARD EXCAVATING WOOD CHIP CTR COMPOSTING	232734-3001 ACTIVE
KAISER ENTERPRISES INC. COMPOSTING	202726-3001 ACTIVE

Water Quantity

WATER USER *STREAM*	*REGULATED CAPACITY (MGD)* *PUMPING CAPACITY (MGD)*
SCE&G VC SUMMER NUCLEAR STATION WTP MONTICELLO RESERVOIR	1.6 3.2

Growth Potential

There is a low to moderate potential for growth in this watershed, primarily associated with residential development around the reservoirs, the Towns of Prosperity and Pomaria, and the City of Newberry. The upper portion of the watershed is effectively excluded from development by the Sumter National Forest, and the overall lack of adequate utilities to serve the remaining area will limit growth.

03050106-05

(Little River)

General Description

Watershed 03050106-05 (formerly 03050106-070, -080) is located in Chester, Fairfield, and Richland Counties and consists primarily of the ***Little River*** and its tributaries. The watershed occupies 155,269 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 72.3% forested land, 17.4% agricultural land, 4.0% urban land, 2.8% forested wetland, 2.1% barren land, 1.0% scrub/shrub land, and 0.4% water.

Big Creek and Little Creek join to form the headwaters of the Little River near the Town of Blackstock. Downstream of the confluence, the Little River accepts drainage from Hill Creek, Camp Branch, Brushy Fork Creek (Dumpers Creek), the West Fork Little River (Weir Creek, Spring Branch, Williams Creek, Opossum Branch), Lick Branch, and Harden Branch. Jackson Creek is created by the confluence of Winnsboro Branch and Moore Creek near the Town of Winnsboro. Jackson Creek accepts drainage from Jordan Branch, Kennedy Creek, Sand Creek, Stitt Branch, and Gladney Branch before flowing into the Little River. Downstream of Jackson Creek, the river accepts drainage from Crumpton Creek, Mill Creek, Morris Creek, Gibson Branch (Manns Branch, Russell Creek), and Home Branch. The Little River drains into the Broad River. There are a total of 287.4 stream miles and 493.3 acres of lake waters, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
B-123	S/W	FW	WINNSBORO BRANCH AT US 321, ABOVE WINNSBORO MILLS OUTFALL
B-077	S/W	FW	WINNSBORO BRANCH BELOW PLANT OUTFALL
B-102	W/BIO/INT	FW	JACKSON CREEK AT S-20-54, 5 MI W OF WINNSBORO
B-338	W/INT	FW	MILL CREEK AT S-20-48, 10 MI SW OF WINNSBORO
B-145	S/BIO/W	FW	LITTLE RIVER AT S-20-60, 3.1 MI SW OF JENKINSVILLE
B-350	INT	FW	LITTLE RIVER AT SC 215, 1.5 MI NE OF CONFLUENCE WITH BROAD RIVER

Winnsboro Branch - There are two SCDHEC monitoring stations along Winnsboro Branch and recreational uses are not supported at either site due to fecal coliform bacteria excursions. At the upstream site ***(B-123)***, aquatic life uses are fully supported. There is a significant increasing trend in pH. At the downstream site ***(B-077)***, aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life chronic criterion. There is also a significant increasing trend in total phosphorus concentration. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter.

Jackson Creek (B-102) - Aquatic life uses are not supported based on macroinvertebrate community data and due to occurrences of copper in excess of the aquatic life chronic criterion. There is a significant increasing trend in pH. A significant increasing trend in dissolved oxygen concentration suggests

improving conditions for this parameter. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Mill Creek (B-338) – Aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. Recreational uses are not supported due to fecal coliform bacteria excursions.

Little River – There are two SCDHEC monitoring stations along Little River. At the upstream site ***(B-145)***, aquatic life uses are fully supported. There is a significant increasing trend in pH. Recreational uses are not supported at this site due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter. At the downstream site ***(B-350)***, aquatic life uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand, turbidity, and total nitrogen concentration. There is a significant increasing trend in pH. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-057	GB	PIEDMONT BEDROCK	JENKINSVILLE #11

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)* *COMMENT*	*NPDES#* *TYPE* *LIMITATION*
MORRIS CREEK TRIBUTARY MARTIN MARIETTA/RION QUARRY PIPE #: 001 FLOW: M/R	SCG730060 MINOR INDUSTRIAL
JACKSON CREEK TOWN OF WINNSBORO/JACKSON CREEK PLANT PIPE #: 001 FLOW: 1.6	SC0020125 MAJOR DOMESTIC
WINNSBORRO BRANCH INVISTA SARL/WINNSBORO PIPE #: 001 FLOW: M/R	SCG250215 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Activities

SOLID WASTE LANDFILL NAME *FACILITY TYPE*	*PERMIT #* *STATUS*
FAIRFIELD COUNTY SW TRANSFER STA. DOMESTIC	202401-6001 ACTIVE
FAIRFIELD COUNTY LANDFILL DOMESTIC	DWP-090; DWP-024 CLOSED
TOWN OF WINNSBORO SANITARY LANDFILL DOMESTIC	--------- CLOSED

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
VULCAN CONSTRUCTION MATERIALS LP BLAIR QUARRY	0130-39 GRANITE
FAIRFIELD COUNTY CATHCART PIT	1523-39 SAND
MARTIN MARIETTA MATERIALS RION QUARRY	0100-39 GRANITE

Water Quantity

WATER USER *STREAM*	*REGULATED CAPACITY (MGD)* *PUMPING CAPACITY (MGD)*
TOWN OF WINNSBORO SAND CREEK	0.5 0.7
TOWN OF WINNSBORO MILL CREEK - 192 ACRE LAKE	3.1 8.0

Growth Potential

There is a moderate potential for growth in this watershed except for in and around the City of Winnsboro, where water and sewer services exist. The recent opening of a new industrial operation in the former Mack Truck plant shows the intention of civic leaders in Winnsboro to regain employment lost by plant closures over the past ten years.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Jackson Creek** (***B-102***). There are no facilities that have fecal coliform limits in their NPDES permits that discharge into Jackson Creek. Nor is any of Jackson Creek watershed within a Municipal Separate Storm Sewer System (MS4) designated area. Possible sources of fecal coliform bacteria in Jackson Creek, identified in the TMDL, include sources in Winnsboro Branch, failing onsite wastewater disposal systems, land application of manure, cattle watering in the creek, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Jackson Creek of 86% in order for the creek to meet the recreational use standard.

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Mill Creek** at water quality monitoring site ***B-338***. No facilities that have fecal coliform limits in their NPDES permits discharge into the creek. None of the Mill Creek watershed is in a Municipal Separate Storm Sewer System (MS4) designated area. Possible sources of fecal coliform bacteria in Mill Creek identified in the TMDL include failing onsite wastewater disposal systems, land application of manure, cattle watering in the creek, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Mill Creek of 71% in order for the creek to meet the recreational use standard.

TMDLs were also developed for SCDHEC and approved by EPA for fecal coliform bacteria in the **Little River** at water quality monitoring sites ***B-145*** and ***B-350***. There are no facilities that have fecal coliform limits in their NPDES permits that discharge into Little River. None of the Little River watershed is within a Municipal Separate Storm Sewer System (MS4) designated area. Possible sources of fecal coliform bacteria in the Little River, identified in the TMDL, include failing onsite wastewater disposal systems, land application of manure, cattle watering in the creek, pets, and wildlife. The TMDLs specify reductions in the load of fecal coliform bacteria into Little River of 60% (B-145) and 88% (B-350) in order for the creek to meet the recreational use standard.

TMDLs were developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Winnsboro Branch** at water quality monitoring sites ***B-123*** and ***B-077***. The Winnsboro/Jackson Creek WWTP (SC0020125) discharges into Winnsboro Branch downstream of B-123. Though the upper part of Winnsboro Branch is an urbanized area - Winnsboro, the town is not a designated Municipal Separate Storm Sewer System (MS4). Possible sources of fecal coliform bacteria in Winnsboro Branch, identified in the TMDL, include leaking sewers, SSOs, failing onsite wastewater disposal systems, pets, and wildlife. The TMDLs specify reductions in the load of fecal coliform bacteria into Winnsboro Branch of 99% (B-123) and 93% (B-077) in order for the creek to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

03050106-06

(Cedar Creek)

General Description

Watershed 03050106-06 (formerly 03050106-090) is located in Fairfield and Richland Counties and consists primarily of ***Cedar Creek*** and its tributaries. The watershed occupies 64,581 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 75.1% forested land, 14.8% agricultural land, 6.8% urban land, 1.3% forested wetland, 0.7% scrub/shrub land, 0.7% water, and 0.6% barren land.

Big Cedar Creek originates near the Town of Ridgeway and accepts drainage from Center Creek (Rock Dam Creek), Persimmon Fork, Horse Creek, Williams Branch (Big Branch), and Little Cedar Creek (Crooked Run Creek, Bethel Pond, Smith Branch, Chappel Branch). Big Cedar Creek merges with Harmon Creek (Little Horse Branch, Elkins Creek) to form Cedar Creek, which flows into the Broad River. There are a total of 135.6 stream miles and 163.9 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
B-320	W/BIO	FW	BIG CEDAR CREEK AT SC 215
RS-02453	INT	FW	BIG CEDAR CREEK AT SC 215

Big Cedar Creek (B-320/RS-02453) – Aquatic life uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand and total nitrogen concentration. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. Very high concentrations of cadmium were measured in the 2003 and 2004 sediment samples. Recreational uses are not supported due to fecal coliform bacteria excursions.

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-058	GB	PIEDMONT BEDROCK	RIDGEWAY

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)* *COMMENT*	*NPDES#* *TYPE* *LIMITATION*
CENTER CREEK TOWN OF RIDGEWAY WWTP PIPE #: 001 FLOW: 0.12	SC0022900 MINOR DOMESTIC

PERSIMMON FORK TRIBUTARY L DEAN WEAVER/HAGOOD MINE PIPE #: 001 FLOW: M/R	SCG730394 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Activities

SOLID WASTE LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
TRAPP/DERRICK LANE ST C&D LANDFILL CONSTRUCTION	202900-1301 INACTIVE
MITCH HOOK WOOD COMPOSTING COMPOSTING	402696-3001 ACTIVE

Growth Potential

There is a low potential for growth in the majority of this watershed. Portions of the Towns of Ridgeway and Blythewood are located along the eastern edge of the watershed. Water and sewer services are available in the Blythewood area, which is expected to be a moderate to high growth area.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

A total maximum daily load (TMDL) for fecal coliform was developed for ***Cedar Creek*** in 2000. Levels of fecal coliform bacteria can be elevated in water bodies as the result of both point and nonpoint sources of pollution. Between 1991 and 1995, 25% of the samples collected at station ***B-320*** exceeded the 400 colonies/100ml standard. Targeting agricultural land for reduction of bacteria is the most effective strategy for this watershed. A target level for fecal coliform bacteria of 175 colonies/100ml was established. This translates to an agricultural bacterial loading reduction of 52%. Forested lands are not targeted for reduction, as there are currently no acceptable means of reducing fecal coliform sources within that land use. There are several tools available for implementing this TMDL, including Nonpoint Source (NPS) pollution outreach activities and materials. SCDHEC will continue to monitor water quality in Cedar Creek to evaluate the effectiveness of these measures.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

03050106-07

(Broad River)

General Description

Watershed 03050106-07 (formerly 03050106-060) is located Newberry, Fairfield, and Richland Counties and consists primarily of the ***Broad River*** and its tributaries from the Parr Shoals dam to its confluence with the Saluda River. The watershed occupies 148,599 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 59.4% forested land, 21.4% urban land, 13.0% agricultural land, 3.0% forested wetland, 2.0% water, 0.8% barren land, and 0.4% scrub/shrub land.

This section of the Broad River accepts drainage from its upper reaches, together with Mayo Creek, Crims Creek (Rocky Creek, Summers Branch), Wateree Creek (Risters Creek), Boone Creek, Freshley Branch, Mussel Creek, and the Little River Watershed. Hollingshead Creek (Boyd Branch, Wildhorse Branch, Metz Branch, Hope Creek, Bookman Creek) enters the river next followed by the Cedar Creek Watershed, Nipper Creek, Nicholas Creek (Swygert Branch, Moccasin Branch), Slatestone Creek, and Burgess Creek. Crane Creek and Smith Branch enter the river at the base of the watershed near the City of Columbia. Sorghum Branch, Dry Branch (Crescent Lake, Stevensons Lake, Roberts Branch), Elizabeth Lake, and Cumbess Creek drain into Crane Creek followed by North Branch Crane Creek. North Branch Cane Creek accepts drainage from Beasley Creek (Robertson Branch, Lot Branch, Hawkins Branch), Swygert Creek, Dry Fork Creek, and Long Branch. A portion of the Broad River is diverted into the Broad River Canal in Columbia before flowing into the Congaree River. Although depicted in the upper Congaree River Watershed (03050110-01), the canal is associated with this lower Broad River watershed; therefore any facilities or stations in this area will be included in this watershed. The Harbison State Forest is located next to the Broad River just downstream of Nicholas Creek and a Heritage Trust Preserve is located along Nipper Creek. There are a total of 274.1 stream miles and 671.3 acres of lake waters.

Surface Water Quality

Station #	Type	Class	Description
B-236	P/W	FW	BROAD RIVER AT SC 213, 2.5 MI SW OF JENKINSVILLE
RS-03517	RS03	FW	CRIMS CREEK TRIBUTARY AT S-36-25
B-800	BIO	FW	CRIMS CREEK AT SC 213
B-801	BIO	FW	WATEREE CREEK AT SR 698
B-110	S	FW	ELIZABETH LAKE AT SPILLWAY ON US 21
B-316	P	FW	CRANE CREEK AT S-40-43 UNDER I-20, NORTH COLUMBIA
B-280	P/BIO	FW	SMITH BRANCH AT N MAIN ST (US 21) IN COLUMBIA
B-337	W	FW	BROAD RIVER AT US 176 (BROAD RIVER ROAD) IN COLUMBIA
B-080	P/W	FW	BROAD RIVER DIVERSION CANAL AT COLUMBIA WATER PLANT

Broad River – There are two SCDHEC monitoring sites along this section of the Broad River. At the upstream site ***(B-236)***, aquatic life uses are not supported due to occurrences of copper in excess of the

aquatic life chronic criterion. There is a significant increasing trend in pH. A very high concentration of lead was measured in the 2000 sediment sample and chrysenes, fluoranthenes, DDE (a metabolite of DDT), and pyrene were detected in the sample. A very high concentration of cadmium was measured in the 2004 sediment sample. Although the use of DDT was banned in 1973, it is very persistent in the environment. Recreational uses are fully supported at this site and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter. Aquatic life uses are fully supported at the downstream site ***(B-337)***, but recreational uses are partially supported due to fecal coliform bacteria excursions.

Broad River Diversion Canal (B-080) – Aquatic life uses are fully supported, but recreational uses are partially supported due to fecal coliform bacteria excursions.

Crims Creek Tributary (RS-03517) – Aquatic life uses are fully supported. A very high concentration of cadmium was measured in the 2003 sediment sample. Recreational uses are not supported due to fecal coliform bacteria excursions.

Crims Creek (B-800) – Aquatic life uses are partially supported based on macroinvertebrate community data.

Wateree Creek (B-801) – Aquatic life uses are fully supported based on macroinvertebrate community data.

Elizabeth Lake (B-110) – Aquatic life uses are fully supported. There is a significant increasing trend in pH. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Crane Creek (B-316) – Aquatic life uses are partially supported based on macroinvertebrate community data. There is a significant increasing trend in pH. A significant decreasing trend in turbidity suggests improving conditions for this parameter. A very high concentration of cadmium was measured in the 2000 sediment sample and dieldrin, DDE (a metabolite of DDT), and DDT were also detected in the sample. Benzoic acid and bis(n-octyl) phthalate were detected in the 2004 sediment sample. Although the use of DDT was banned in 1973, it is very persistent in the environment. Recreational uses are partially supported due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Smith Branch (B-280) – Aquatic life uses are fully supported; however, there is a significant increasing trend in total phosphorus concentration. There is a significant increasing trend in pH. Significant increasing trends in dissolved oxygen concentration and decreasing trends in turbidity suggest improving conditions for these parameters. Recreational uses are not supported due to fecal

coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
BROAD RIVER SCE&G/PARR HYDRO STA. PIPE #: 001 FLOW: 0.035	SC0001864 MINOR INDUSTRIAL
BROAD RIVER MARTIN MARIETTA/N. COLUMBIA QUARRY PIPE #: 001 FLOW: M/R	SCG730066 MINOR INDUSTRIAL
BROAD RIVER RAINTREE ACRES SD/MIDLANDS UTILITIES PIPE #: 001 FLOW: 0.14	SC0039055 MINOR DOMESTIC
BROAD RIVER TOWN OF CHAPIN WWTP PIPE #: 001 FLOW: 1.2 PIPE #: 001 FLOW: 2.4, 5.0 (PROPOSED)	SC0040631 MAJOR DOMESTIC
BROAD RIVER RICHLAND COUNTY BROAD RIVER WWTP PIPE #: 001 FLOW: 2.5 (6.0 PROPOSED)	SC0046621 MAJOR DOMESTIC
MAYO CREEK (TO BROAD RIVER) SCE&G/SUMMER NUCLEAR STA. PIPE #: 013 FLOW: 0.015	SC0030856 MAJOR INDUSTRIAL
MAYO CREEK SCE&G/SUMMER NUCLEAR TRAINING CTR PIPE #: 001 FLOW: 0.0004 (PIPE #: 002 FLOW: 0.0105 PROPOSED)	SC0038407 MINOR INDUSTRIAL
CRANE CREEK HANSON BRICK COLUMBIA PIPE #: 001 FLOW: 0.0065	SC0031640 MINOR INDUSTRIAL
NIPPER CREEK VULCAN MATERIALS CO./DREYFUS QUARRY PIPE #: 001, 002 FLOW: M/R	SCG730052 MINOR INDUSTRIAL
BEASLEY CREEK TRIBUTARY BOSE CORPORATION PIPE #: 001 FLOW: M/R	SCG250182 MINOR INDUSTRIAL
BURGESS CREEK HANSON BRICK EAST.MANNING PIT PIPE #: 001 FLOW: M/R	SCG730509 MINOR INDUSTRIAL

BROAD RIVER TRIBUTARY MARTIN MARIETTA/HARBISON QUARRY PIPE #: 001 FLOW: M/R	SCG730588 MINOR INDUSTRIAL
BROAD RIVER TRIBUTARY BORAL BRICKS/LABORDE MINE PIPE #: 001 FLOW: M/R	SCG730639 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Activities

SOLID WASTE LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
RICHLAND COUNTY SANITARY LANDFILL DOMESTIC	401001-1101 CLOSED
RICHLAND COUNTY C&D LANDFILL	401001-1201, 1202 ACTIVE
OLD CITY OF COLUMBIA LANDFILL DOMESTIC	-------- CLOSED
DARTMOUTH AVENUE C&D DUMP DOMESTIC	-------- CLOSED
KNIGHTNER STREET C&D DUMP C&D LANDFILL	-------- CLOSED
CRAWFORD ROAD C&D DUMP C&D LANDFILL	-------- CLOSED
BREAZIO ROAD C&D DUMP C&D LANDFILL	-------- CLOSED
ETHELS AVENUE C&D DUMP C&D LANDFILL	-------- CLOSED
EAGLE CONSTRUCTION C&D	PROPOSED ---------
COUNTY LINE C&D LF C&D	PROPOSED ---------
CAROLINA WRECKING ST C&D LC LANDFILL C&D LANDFILL	402451-1301 CLOSED
SHEALY LC&D C&D LANDFILL	402405-1701 INACTIVE
BILLY MEETZ C&D LANDFILL	402463-1701 ACTIVE

WHITAKER AIR CURTAIN INCINERATOR INCINERATOR	402769-4001 ACTIVE
EARGLES COMPOSTING COMPOSTING	402706-3001 INACTIVE
LOVELESS & LOVELESS, INC. C&D LANDFILL	402428-6001 INACTIVE
BROAD RIVER LANDSCAPING C&D LANDFILL	402467-1701 ACTIVE
MUNGO HOMES INC. LAND APPLICATION	402645-8001 ACTIVE
BILL MOCK DUMP DOMESTIC	---------- CLOSED
BFI WASTESTREAM DOMESTIC	-------- INACTIVE
BLYTHEWOOD CONSTRUCTION CO., INC. C&D LANDFILL	402479-1701 ACTIVE
ELMWOOD AVE. SITE C&D LANDFILL	402631-2001 INACTIVE

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
MARTIN MARIETTA MATERIALS INC. NORTH COLUMBIA QUARRY	0099-79 GRANITE
MARTIN MARIETTA MATERIALS INC. HARBISON QUARRY	0101-79 SHALE
RICHARDSON CONSTRUCTION CO. RICHARDSON'S MONTICELLO FILL	0738-79 CLAY
BORAL BRICK, INC. LABORDE MINE	0448-79 CLAY
HANSON BRICK COLUMBIA BROAD RIVER MINE	0187-79 SHALE
HANSON BRICK COLUMBIA MANNING	0538-79 SHALE
VULCAN CONSTRUCTION MATERIALS LP DREYFUS QUARRY	0129-79 GRANITE

Water Quantity

WATER USER STREAM	*REGULATED CAPACITY (MGD) PUMPING CAPACITY (MGD)*
CITY OF COLUMBIA	71.0
BROAD RIVER CANAL	91.0

Growth Potential

There is a high potential for growth in this watershed, which contains the northwest portion of the Greater Columbia Metropolitan Area and ample water and sewer service. In addition, the watershed contains the Town of Peak and portions of the Towns of Irmo, Chapin, Little Mountain, and Blythewood. The I-26, I-20, and I-77 corridors, along with the U.S. Hwy. 321, U.S. Hwy. 21, and U.S. Hwy. 176 corridors, will serve to increase residential, commercial, and industrial growth in the Greater Columbia Area. The northwest portion of the city (St. Andrews, Irmo, and Harbison) will continue to develop as a regional commercial hub for the area. Industrial development along the I-77 corridor is expected to remain strong due to the aggressive economic development policy by the City of Columbia and Richland County. The Killian and Blythewood areas in particular are expected to see increased construction activity. There is a high potential for growth on the eastern edge of the watershed, in Northeast Richland County. New commercial developments (The Village at Sandhills, Rice Creek Village, Sparkleberry Square, Sparkleberry Crossing) are expected to further increase the growth of a rapidly growing residential area.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in the **Broad River** at Columbia (***B-337***). There are eight facilities that have fecal coliform limits in their NPDES permits that discharge into this long section of the Broad River. Part of the City of Columbia Municipal Separate Storm Sewer System (MS4) is in this section of the Broad River watershed. Possible sources of fecal coliform bacteria in the Broad River, identified in the TMDL, include MS4 stormwater runoff, leaking sewers, SSOs, failing onsite wastewater disposal systems, land application of manure, cattle watering in the creek, pets, and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into this section of the Broad River of 62% in order for the river to meet the recreational use standard.

TMDLs were also developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Crane Creek** at water quality monitoring sites ***B-110*** (the Elizabeth Lake spillway) and ***B-316***. Hanson Brick Corporation (SC0031640) has fecal coliform limits in its NPDES permit. It discharges into Crane Creek downstream of Elizabeth Lake. The City of Columbia Phase I Municipal Separate Storm Sewer System (MS4) extends into the Crane Creek watershed. Possible sources of fecal coliform bacteria in Crane Creek identified in the TMDL include Stormwater from the MS4 areas, leaking sewers, failing onsite wastewater disposal systems, pets, and wildlife. The TMDLs specify reductions in the load of

fecal coliform bacteria into Crane Creek above Elizabeth Lake of 48% and downstream of Lake Elizabeth of 92 % in order for the creek to meet the recreational use standard.

A TMDL was developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Smith Branch** at water quality monitoring site ***B-280***. There are no facilities that have fecal coliform limits in their NPDES permits that discharge into Smith Branch. However, the creek drains a highly urbanized area of Columbia, which is designated as the City of Columbia Municipal Separate Storm Sewer System (MS4). Possible sources of fecal coliform bacteria in the branch, identified in the TMDL, include MS4 runoff, leaking sewers, failing onsite wastewater disposal systems, pets and wildlife. The TMDL specifies a reduction in the load of fecal coliform bacteria into Smith Branch of 99% in order for the creek to meet the recreational use standard.

Funding for TMDL implementation activities is currently available. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

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APPENDIX A.

Enoree River Basin

Ambient Water Quality Monitoring Site Descriptions

Station #	Type	Class	Description
03050108-01			
BE-001	P/W	FW	Enoree River at unnumbered road W of U.S. 25, N of Travelers Rest
BE-039	S/W	FW	Beaverdam Creek at Road 1967
B-795	BIO	FW	Buckhorn Creek at SR 562
B-186	S/W	FW	Mountain Creek at S-23-335
BE-008	BIO	FW	Mountain Creek at SR 279
B-192	P/W	FW	Princess Creek at Suber Mill Rd, second road S of US 29 off S-23-540
BE-015	S/W	FW	Enoree River at County Road 164
BE-035	S/W	FW	Brushy Creek at Howell Rd (S-23-273), approx. 5 mi NE of Greenville
BE-009	S/BIO/W	FW	Brushy Creek at S-23-164
BE-007	S/BIO/W	FW	Rocky Creek at Batesville bridge, 1 mi above confl. with Enoree R.
B-792	BIO	FW	Abner Creek at Bennetts Ridge Rd.
BE-017	P/SPRP	FW	Enoree River at SC 296, 7.5 mi NE of Mauldin
BE-040	S/W	FW	Gilder Creek at SC 14, above Gilders Creek Plant
B-241	S/W	FW	Gilder Creek at S-23-142, 2.75 mi ENE of Mauldin
B-793	BIO	FW	Horsepen Creek at SR 145
BE-020	S/BIO/W	FW	Gilder Creek at S-23-143, 1/4 mi above confluence with Enoree River
BE-018	S/W	FW	Enoree River at S-30-75
BE-019	BIO	FW	Enoree River at SC 418
B-037	S/W	FW	Enoree River at S-42-118, SW of Woodruff
B-038	S/W	FW	Lick Creek at S-42-118, 1.25 mi SW Woodruff
B-035	S/W	FW	Durbin Creek on S-23-160, 3 mi E of Simpsonville
B-097	P/W	FW	Durbin Creek at SC 418
BE-022	BIO	FW	Durbin Creek at SC 101
B-040	W/INT	FW	Enoree River at S-30-112
03050108-02			
B-246	W/BIO/INT	FW	Beaverdam Creek at S-30-97, 7 mi NE of Gray Court
B-041	P/W	FW	Enoree River at SC 49, SE of Woodruff
B-150	W/INT	FW	Warrior Creek at US 221, 8 mi NNE of Laurens
B-742	BIO	FW	Warrior Creek at SC 49
B-785	BIO	FW	Cedar Shoals Ck at unnamed rd 0.2 km above confl.w/Enoree R.
B-053	W/INT	FW	Enoree River at SC 72, 121, & US 176, 1 mi NE Whitmire
RS-03495	RS03	FW	Enoree River at SC 72, 121, & US 176, 1 mi NE Whitmire
03050108-03			
B-735	W	FW	Duncan Creek Reservoir 6B
B-231	S/W	FW	Beards Fork Creek at US 276 (I-385), 3.7 mi NNE of Clinton
RS-01057	RS01/BIO	FW	Duncan Creek at County rd 26, 4.5 mi NE of Clinton
B-072	P/BIO/INT	FW	Duncan Creek at US 176, 1.5 mi SE of Whitmire
03050108-05			
B-799	BIO	FW	Kings Creek at US 176, downstream of bridge
B-054	P/INT	FW	Enoree River at S-36-45, 3.5 mi above confluence with Broad River

For further details concerning sampling frequency and parameters sampled, please visit our website at www.scdhec.gov/eqc/admin/html/eqcpubs.html#wqreportsT for the current State of S.C. Monitoring Strategy.

Water Quality Data

Spreadsheet Legend

Station Information:

STATION NUMBER Station ID

TYPE SCDHEC station type code

- **P** = Primary station, sampled monthly all year round
- **S** = Secondary station, sampled monthly May - October
- **P*** = Secondary station upgraded to primary station parameter coverage and sampling frequency for basin study
- **W** = Special watershed station added for the Broad River Basin study
- **BIO** = Indicates macroinvertebrate community data assessed
- **INT** = Integrator Station (approximates a Primary station)
- **RL** = Random Lake station
- **RO** = Random Open water station
- **RS** = Random Stream station
- **RT** = Random Tide Creek station

WATERBODY NAME Stream or Lake Name

CLASS Stream classification at the point where monitoring station is located

Parameter Abbreviations and Parameter Measurement Units:

DO	Dissolved Oxygen (mg/l)	**NH3**	Ammonia (mg/l)
BOD	Five-Day Biochemical Oxygen Demand (mg/l)	**CD**	Cadmium (ug/l)
pH	pH (SU)	**CR**	Chromium (ug/l)
TP	Total Phosphorus (mg/l)	**CU**	Copper (ug/l)
TN	Total Nitrogen (mg/l)	**PB**	Lead (ug/l)
TURB	Turbidity (NTU)	**HG**	Mercury (ug/l)
TSS	Total Suspended Solids (mg/l)	**NI**	Nickel (ug/l)
BACT	Fecal Coliform Bacteria (#/100 ml)	**ZN**	Zinc (ug/l)

Statistical Abbreviations:

N For *standards compliance*, number of surface samples collected between **January 2000 and December 2004**.
For *trends*, number of surface samples collected between **January 1990 and December 2004**.
For *total phosphorus*, an additional trend period of January 1992 to December 2004 is also reported.

EXC. Number of samples contravening the appropriate standard

% Percentage of samples contravening the appropriate standard

MEAN EXC. Mean of samples that contravened the applied standard

MED For *heavy metals with a human health criterion*, this is the median of all surface samples between January 2000 and December 2004. DL indicates that the median was the detection limit.

MAG Magnitude of any statistically significant trend, average change per year, expressed in parameter measurement units

GEO MEAN Geometric mean of fecal coliform bacteria samples collected between January 2000 and December 2004

Key to Trends:

D Statistically significant decreasing trend in parameter concentration

I Statistically significant increasing trend in parameter concentration

***** No statistically significant trend

Enoree River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	DO N	DO EXC.	DO %	MEAN EXC.	TRENDS (90-2004) DO	N	MAG	BOD	N	MAG
0305010801													
BE-001	BD	ENOREE RVR	FW	23	0	0	0	*	140	-0.014	*	141	-0.006
BE-039	BD	BEAVERDAM CK	FW	18	0	0	0	*	67	0	D	68	-0.04
B-795		BUCKHORN CK											
B-186	BD	MOUNTAIN CK	FW	18	0	0	0	*	69	0	*	66	-0.033
BE-008		MOUNTAIN CK											
B-192	BD	PRINCESS CK	FW	22	0	0	0	*	124	-0.024	*	123	0.02
BE-015	BD	ENOREE RVR	FW	18	0	0	0	*	71	0	*	68	0
BE-035	BD	BRUSHY CK	FW	18	0	0	0	*	68	0.02	*	65	-0.038
BE-009	BD	BRUSHY CK	FW	18	0	0	0	*	71	0	*	68	0
BE-007	BD	ROCKY CK	FW	18	0	0	0	*	71	-0.019	*	68	0
B-792		ABENERS CK											
BE-017	SPRP	ENOREE RVR	FW	58	0	0	0	I	119	0.079	D	113	-0.15
BE-040	BD	GILDER CK	FW	18	0	0	0	*	70	-0.009	*	67	-0.025
B-241	BD	GILDER CK	FW	16	0	0	0	*	70	-0.008	*	67	0
B-793		HORSE PEN CK											
BE-020	BD	GILDER CK	FW	18	0	0	0	*	72	0.005	*	69	0
BE-018	BD	ENOREE RVR	FW	18	0	0	0	I	70	0.04	*	66	-0.05
BE-019		ENOREE RVR											
B-037	BD	ENOREE RVR	FW	18	0	0	0	*	69	0.005	*	67	-0.025
B-038	BD	LICK CK	FW	17	0	0	0	*	69	0.029	D	67	-0.05
B-035	BD	DURBIN CK	FW	19	0	0	0	*	73	-0.025	*	70	-0.016
B-097	BD	DURBIN CK	FW	24	0	0	0	*	127	-0.029	I	123	0.066
BE-022		DURBIN CK											
B-040	INT	ENOREE RVR	FW	46	0	0	0	*	69	0.013	*	65	0.006
0305010802													
B-246	INT	BEAVERDAM CK	FW	46	1	2	4.9	*	69	-0.051	I	68	0.06
B-041	BD	ENOREE RVR	FW	24	0	0	0	*	142	0	*	141	0.014
B-150	INT	WARRIOR CK	FW	47	3	6	3.9833	*	70	-0.04	I	68	0.071
B-742		WARRIOR CK											
B-785		CEDAR SHOALS CK											
B-053	INT	ENOREE RVR	FW	46	0	0	0	I	70	0.052	*	69	0
0305010803													
B-735	BD	LAKE, DUNCAN CK RES. 6B	FW	12	0	0	0						
B-231	BD	BEARDS FORK CK	FW	18	2	11	3.775	*	70	0.04	*	68	0.018
RS-01057	RS01	DUNCAN CK	FW	11	0	0	0						
B-072	INT	DUNCAN CK	FW	58	0	0	0	I	159	0.029	*	152	-0.025
0305010805													
B-799		KINGS CK											
B-054	INT	ENOREE RVR	FW	58	0	0	0	I	173	0.049	D	169	-0.034

Enoree River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	pH N	pH EXC.	pH %	MEAN EXC.	TRENDS (90-2004) PH	TRENDS (90-2004) N	TRENDS (90-2004) MAG	TURB N	TURB EXC.	TURB %	MEAN EXC.	TRENDS (90-2004) TURB	TRENDS (90-2004) N	TRENDS (90-2004) MAG
0305010801																	
BE-001	BD	ENOREE RVR	FW	24	2	8	5.855	*	140	0	24	1	4	80	D	142	-0.248
BE-039	BD	BEAVERDAM CK	FW	18	4	22	5.61	*	69	-0.002	18	0	0	0	D	68	-0.333
B-795		BUCKHORN CK															
B-186	BD	MOUNTAIN CK	FW	18	2	11	5.615	I	67	0.022	18	0	0	0	*	68	-0.101
BE-008		MOUNTAIN CK															
B-192	BD	PRINCESS CK	FW	23	1	4	5.6	I	122	0.051	23	0	0	0	D	125	-0.299
BE-015	BD	ENOREE RVR	FW	18	0	0	0	I	71	0.024	18	1	6	60	*	71	-0.06
BE-035	BD	BRUSHY CK	FW	18	3	17	5.75	I	67	0.013	18	1	6	51	*	67	-0.072
BE-009	BD	BRUSHY CK	FW	18	2	11	5.89	I	71	0.033	18	0	0	0	*	71	-0.037
BE-007	BD	ROCKY CK	FW	18	0	0	0	I	71	0.03	18	0	0	0	*	71	0.148
B-792		ABENERS CK															
BE-017	SPRP	ENOREE RVR	FW	58	1	2	5.9	I	119	0.025	59	5	8	72.4	D	118	-1.505
BE-040	BD	GILDER CK	FW	18	1	6	5.91	I	70	0.035	18	1	6	85	*	70	-0.1
B-241	BD	GILDER CK	FW	16	0	0	0	I	70	0.032	16	3	19	75.3333	*	70	0.065
B-793		HORSE PEN CK															
BE-020	BD	GILDER CK	FW	18	0	0	0	I	72	0.032	18	1	6	120	*	72	0.096
BE-018	BD	ENOREE RVR	FW	18	0	0	0	I	70	0.014	18	4	22	77.75	*	68	-0.291
BE-019		ENOREE RVR															
B-037	BD	ENOREE RVR	FW	18	0	0	0	*	69	0.006	17	1	6	70	D	67	-0.806
B-038	BD	LICK CK	FW	17	0	0	0	*	69	0.006	16	0	0	0	I	67	0.286
B-035	BD	DURBIN CK	FW	19	0	0	0	*	73	0.018	19	2	11	82.5	D	73	-0.36
B-097	BD	DURBIN CK	FW	24	5	21	5.868	D	128	-0.025	24	6	25	136.667	*	127	0.362
BE-022		DURBIN CK															
B-040	INT	ENOREE RVR	FW	46	2	4	5.945	*	70	0.022	44	4	9	163.75	*	67	-0.81
0305010802																	
B-246	INT	BEAVERDAM CK	FW	46	1	2	5.68	*	70	0.003	45	4	9	117.5	*	69	-0.241
B-041	BD	ENOREE RVR	FW	24	0	0	0	*	141	0.008	23	1	4	87	D	140	-0.508
B-150	INT	WARRIOR CK	FW	47	3	6	5.7133	*	71	0	45	3	7	266.667	*	69	-0.099
B-742		WARRIOR CK															
B-785		CEDAR SHOALS CK															
B-053	INT	ENOREE RVR	FW	46	0	0	0	*	70	0.027	48	6	13	90	*	72	0.913
0305010803																	
B-735	BD	LAKE, DUNCAN CK RES. 6B	FW	12	0	0	0				11	1	9	50			
B-231	BD	BEARDS FORK CK	FW	18	0	0	0	D	71	-0.025	17	1	6	100	*	70	0.039
RS-01057	RS01	DUNCAN CK	FW	11	0	0	0				10	1	10	800			
B-072	INT	DUNCAN CK	FW	58	2	3	6.97	I	159	0.032	60	3	5	64	D	154	-0.432
0305010805																	
B-799		KINGS CK															
B-054	INT	ENOREE RVR	FW	58	2	3	5.345	I	173	0.025	60	11	18	162.364	*	169	0

Enoree River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (92-2004) TP	TRENDS (92-2004) N	TRENDS (92-2004) MAG	TRENDS (90-2004) TP	TRENDS (90-2004) N	TRENDS (90-2004) MAG
0305010801													
BE-001	BD	ENOREE RVR	FW					*	92	0	D	116	0
BE-039	BD	BEAVERDAM CK	FW					*	44	0	D	56	-0.001
B-795		BUCKHORN CK											
B-186	BD	MOUNTAIN CK	FW					*	44	0	*	55	0
BE-008		MOUNTAIN CK											
B-192	BD	PRINCESS CK	FW					*	86	0	*	97	0
BE-015	BD	ENOREE RVR	FW					*	46	0.003	*	58	-0.002
BE-035	BD	BRUSHY CK	FW					*	42	-0.001	*	54	0
BE-009	BD	BRUSHY CK	FW					*	47	0	*	59	0
BE-007	BD	ROCKY CK	FW					*	46	0	*	58	0
B-792		ABENERS CK											
BE-017	SPRP	ENOREE RVR	FW					D	85	-0.015	D	85	-0.015
BE-040	BD	GILDER CK	FW					*	46	0.001	*	57	0
B-241	BD	GILDER CK	FW					*	44	0	*	56	0
B-793		HORSE PEN CK											
BE-020	BD	GILDER CK	FW					*	42	0	*	54	0
BE-018	BD	ENOREE RVR	FW					*	46	0.006	*	58	0.003
BE-019		ENOREE RVR											
B-037	BD	ENOREE RVR	FW					*	39	-0.001	*	49	-0.003
B-038	BD	LICK CK	FW					*	43	0	*	53	0
B-035	BD	DURBIN CK	FW					*	47	0	*	59	-0.001
B-097	BD	DURBIN CK	FW					*	87	0	*	99	0
BE-022		DURBIN CK											
B-040	INT	ENOREE RVR	FW					*	52	0	*	52	0
0305010802													
B-246	INT	BEAVERDAM CK	FW					D	50	-0.002	D	50	-0.002
B-041	BD	ENOREE RVR	FW					*	91	0.001	*	114	-0.001
B-150	INT	WARRIOR CK	FW					*	48	-0.001	*	48	-0.001
B-742		WARRIOR CK											
B-785		CEDAR SHOALS CK											
B-053	INT	ENOREE RVR	FW					*	48	-0.004	*	48	-0.004
0305010803													
B-735	BD	LAKE, DUNCAN CK RES. 6B	FW	12	1	8	0.07						
B-231	BD	BEARDS FORK CK	FW					*	47	0	*	59	0
RS-01057	RS01	DUNCAN CK	FW										
B-072	INT	DUNCAN CK	FW					*	106	0	*	116	0
0305010805													
B-799		KINGS CK											
B-054	INT	ENOREE RVR	FW					D	114	-0.002	D	137	-0.002

Enoree River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (90-2004) TN	TRENDS (90-2004) N	TRENDS (90-2004) MAG	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (90-2004) TSS	TRENDS (90-2004) N	TRENDS (90-2004) MAG
0305010801																	
BE-001	BD	ENOREE RVR	FW					*	137	0.002							
BE-039	BD	BEAVERDAM CK	FW														
B-795		BUCKHORN CK															
B-186	BD	MOUNTAIN CK	FW														
BE-008		MOUNTAIN CK															
B-192	BD	PRINCESS CK	FW					*	107	-0.005							
BE-015	BD	ENOREE RVR	FW														
BE-035	BD	BRUSHY CK	FW														
BE-009	BD	BRUSHY CK	FW														
BE-007	BD	ROCKY CK	FW														
B-792		ABENERS CK															
BE-017	SPRP	ENOREE RVR	FW					*	99	-0.004							
BE-040	BD	GILDER CK	FW														
B-241	BD	GILDER CK	FW														
B-793		HORSE PEN CK															
BE-020	BD	GILDER CK	FW														
BE-018	BD	ENOREE RVR	FW														
BE-019		ENOREE RVR															
B-037	BD	ENOREE RVR	FW														
B-038	BD	LICK CK	FW														
B-035	BD	DURBIN CK	FW														
B-097	BD	DURBIN CK	FW					*	109	-0.002							
BE-022		DURBIN CK															
B-040	INT	ENOREE RVR	FW					*	53	-0.012							
0305010802																	
B-246	INT	BEAVERDAM CK	FW					*	53	0.009							
B-041	BD	ENOREE RVR	FW					D	134	-0.02							
B-150	INT	WARRIOR CK	FW					*	51	0.006							
B-742		WARRIOR CK															
B-785		CEDAR SHOALS CK															
B-053	INT	ENOREE RVR	FW					*	51	-0.022					*	68	0.05
0305010803																	
B-735	BD	LAKE, DUNCAN CK RES. 6B	FW	11	0	0	0				6	0	0	0			
B-231	BD	BEARDS FORK CK	FW														
RS-01057	RS01	DUNCAN CK	FW														
B-072	INT	DUNCAN CK	FW					*	122	0.003							
0305010805																	
B-799		KINGS CK															
B-054	INT	ENOREE RVR	FW					*	154	-0.002					*	161	-0.411

Enoree River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	GEO MEAN	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (90-2004) BACT	TRENDS (90-2004) N	TRENDS (90-2004) MAG	NH3 N	NH3 EXC.	NH3 %
0305010801														
BE-001	BD	ENOREE RVR	FW	342.712	24	9	38	3313.333	*	143	1.247	20	0	0
BE-039	BD	BEAVERDAM CK	FW	398.091	18	9	50	1254.444	*	69	14.957	10	0	0
B-795		BUCKHORN CK												
B-186	BD	MOUNTAIN CK	FW	324.701	18	6	33	4540	*	68	-21.152	10	0	0
BE-008		MOUNTAIN CK												
B-192	BD	PRINCESS CK	FW	181.923	23	8	35	2435	I	126	20.771	20	0	0
BE-015	BD	ENOREE RVR	FW	271.779	18	7	39	1202.857	*	71	-8.094	10	0	0
BE-035	BD	BRUSHY CK	FW	959.242	18	14	78	3099.286	*	68	-19.01	10	0	0
BE-009	BD	BRUSHY CK	FW	298.29	18	8	44	1706.25	*	71	10.01	10	0	0
BE-007	BD	ROCKY CK	FW	302.066	18	6	33	1340	*	71	4.22	10	0	0
B-792		ABENERS CK												
BE-017	SPRP	ENOREE RVR	FW	281.86	59	16	27	1620	D	119	-12.715	41	0	0
BE-040	BD	GILDER CK	FW	872.847	18	15	83	1506	*	70	-19.847	10	0	0
B-241	BD	GILDER CK	FW	455.681	16	8	50	1185	*	70	-19.778	9	0	0
B-793		HORSE PEN CK												
BE-020	BD	GILDER CK	FW	313.431	18	7	39	1622.857	*	71	-4.029	10	0	0
BE-018	BD	ENOREE RVR	FW	307.263	18	4	22	4875	*	68	-11.635	10	0	0
BE-019		ENOREE RVR												
B-037	BD	ENOREE RVR	FW	226.73	18	5	28	894	*	69	-2.223	11	0	0
B-038	BD	LICK CK	FW	553.228	17	9	53	2600	*	69	5.294	10	0	0
B-035	BD	DURBIN CK	FW	729.262	19	14	74	1370	*	73	8.939	11	0	0
B-097	BD	DURBIN CK	FW	712.216	24	16	67	1676.25	I	128	20.167	20	0	0
BE-022		DURBIN CK												
B-040	INT	ENOREE RVR	FW	231.76	46	13	28	967.6923	I	70	8.84	31	0	0
0305010802														
B-246	INT	BEAVERDAM CK	FW	348.031	47	19	40	2262.105	D	71	-20.111	29	0	0
B-041	BD	ENOREE RVR	FW	211.438	24	5	21	958	D	143	-6.24	23	0	0
B-150	INT	WARRIOR CK	FW	333.092	47	16	34	1326.25	*	71	-12.214	29	0	0
B-742		WARRIOR CK												
B-785		CEDAR SHOALS CK												
B-053	INT	ENOREE RVR	FW	215.895	48	11	23	861.8182	*	72	1.501	28	0	0
0305010803														
B-735	BD	LAKE, DUNCAN CK RES. 6B	FW	12.3347	12	1	8	1600				11	0	0
B-231	BD	BEARDS FORK CK	FW	188.009	18	5	28	974	*	71	-0.346	11	0	0
RS-01057	RS01	DUNCAN CK	FW	314.131	11	3	27	2076.667				6	0	0
B-072	INT	DUNCAN CK	FW	304.999	59	16	27	1321.25	D	153	-14.275	41	0	0
0305010805														
B-799		KINGS CK												
B-054	INT	ENOREE RVR	FW	207.664	59	12	20	1856.667	D	171	-5.013	40	0	0

Enoree River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.	CU N	CU EXC.	CU %	MEAN EXC.	PB N	PB EXC.	PB %	MEAN EXC.
0305010801																			
BE-001	BD	ENOREE RVR	FW	8	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0
BE-039	BD	BEAVERDAM CK	FW	4	1	25	30	4	0	0	0	4	1	25	22	4	1	25	70
B-795		BUCKHORN CK																	
B-186	BD	MOUNTAIN CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
BE-008		MOUNTAIN CK																	
B-192	BD	PRINCESS CK	FW	8	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0
BE-015	BD	ENOREE RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
BE-035	BD	BRUSHY CK	FW	4	0	0	0	4	0	0	0	4	1	25	16	4	0	0	0
BE-009	BD	BRUSHY CK	FW	4	1	25	18	4	0	0	0	4	1	25	14	4	0	0	0
BE-007	BD	ROCKY CK	FW	4	0	0	0	4	0	0	0	4	1	25	370	4	0	0	0
B-792		ABENERS CK																	
BE-017	SPRP	ENOREE RVR	FW	20	0	0	0	20	0	0	0	20	0	0	0	20	0	0	0
BE-040	BD	GILDER CK	FW	4	0	0	0	4	0	0	0	4	1	25	19	4	0	0	0
B-241	BD	GILDER CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-793		HORSE PEN CK																	
BE-020	BD	GILDER CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
BE-018	BD	ENOREE RVR	FW	4	0	0	0	4	0	0	0	4	1	25	31	4	0	0	0
BE-019		ENOREE RVR																	
B-037	BD	ENOREE RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-038	BD	LICK CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-035	BD	DURBIN CK	FW	4	0	0	0	4	0	0	0	4	1	25	19	4	0	0	0
B-097	BD	DURBIN CK	FW	8	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0
BE-022		DURBIN CK																	
B-040	INT	ENOREE RVR	FW	17	0	0	0	17	0	0	0	17	1	6	110	17	0	0	0
0305010802																			
B-246	INT	BEAVERDAM CK	FW	16	0	0	0	16	0	0	0	16	2	13	17.5	16	0	0	0
B-041	BD	ENOREE RVR	FW	8	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0
B-150	INT	WARRIOR CK	FW	16	0	0	0	16	0	0	0	16	0	0	0	16	0	0	0
B-742		WARRIOR CK																	
B-785		CEDAR SHOALS CK																	
B-053	INT	ENOREE RVR	FW	16	1	6	18	16	0	0	0	16	2	13	18	16	0	0	0
0305010803																			
B-735	BD	LAKE, DUNCAN CK RES. 6B	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-231	BD	BEARDS FORK CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
RS-01057	RS01	DUNCAN CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-072	INT	DUNCAN CK	FW	20	0	0	0	20	0	0	0	20	1	5	15	20	0	0	0
0305010805																			
B-799		KINGS CK																	
B-054	INT	ENOREE RVR	FW	20	0	0	0	20	0	0	0	20	2	10	14.5	20	0	0	0

Enoree River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	HG N	HG EXC.	HG %	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
0305010801														
BE-001	BD	ENOREE RVR	FW	8	0	0	8	0	0	0	8	8	100	378.75
BE-039	BD	BEAVERDAM CK	FW	4	0	0	4	1	25	25	4	0	0	0
B-795		BUCKHORN CK												
B-186	BD	MOUNTAIN CK	FW	4	0	0	4	0	0	0	4	0	0	0
BE-008		MOUNTAIN CK												
B-192	BD	PRINCESS CK	FW	8	0	0	8	0	0	0	8	1	13	120
BE-015	BD	ENOREE RVR	FW	4	0	0	4	0	0	0	4	0	0	0
BE-035	BD	BRUSHY CK	FW	4	0	0	4	1	25	40	4	0	0	0
BE-009	BD	BRUSHY CK	FW	4	0	0	4	0	0	0	4	0	0	0
BE-007	BD	ROCKY CK	FW	4	0	0	4	1	25	45	4	1	25	810
B-792		ABENERS CK												
BE-017	SPRP	ENOREE RVR	FW	20	0	0	20	0	0	0	20	0	0	0
BE-040	BD	GILDER CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-241	BD	GILDER CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-793		HORSE PEN CK												
BE-020	BD	GILDER CK	FW	4	0	0	4	0	0	0	4	0	0	0
BE-018	BD	ENOREE RVR	FW	4	0	0	4	0	0	0	4	1	25	100
BE-019		ENOREE RVR												
B-037	BD	ENOREE RVR	FW	4	0	0	4	0	0	0	4	0	0	0
B-038	BD	LICK CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-035	BD	DURBIN CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-097	BD	DURBIN CK	FW	8	0	0	8	0	0	0	8	0	0	0
BE-022		DURBIN CK												
B-040	INT	ENOREE RVR	FW	16	0	0	17	0	0	0	17	0	0	0
0305010802														
B-246	INT	BEAVERDAM CK	FW	16	0	0	16	0	0	0	16	1	6	99
B-041	BD	ENOREE RVR	FW	8	0	0	8	0	0	0	8	0	0	0
B-150	INT	WARRIOR CK	FW	16	0	0	16	0	0	0	16	0	0	0
B-742		WARRIOR CK												
B-785		CEDAR SHOALS CK												
B-053	INT	ENOREE RVR	FW	16	0	0	16	1	6	78	16	1	6	110
0305010803														
B-735	BD	LAKE, DUNCAN CK RES. 6B	FW	4	0	0	4	0	0	0	4	0	0	0
B-231	BD	BEARDS FORK CK	FW	4	0	0	4	0	0	0	4	0	0	0
RS-01057	RS01	DUNCAN CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-072	INT	DUNCAN CK	FW	20	0	0	20	0	0	0	20	1	5	89
0305010805														
B-799		KINGS CK												
B-054	INT	ENOREE RVR	FW	19	0	0	20	1	5	45	20	1	5	89

Enoree River Basin
Watershed Unit Index Map

8-Digit Hydrologic Unit

10-Digit Hydrologic Unit

01

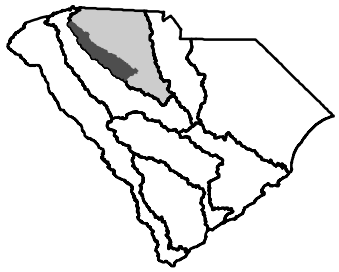
02

03

04

05

03050108



Enoree River Basin

Broad Basin

Major Basins

0 5 10 20 Miles

D H E C

PROMOTE PROTECT PROSPER

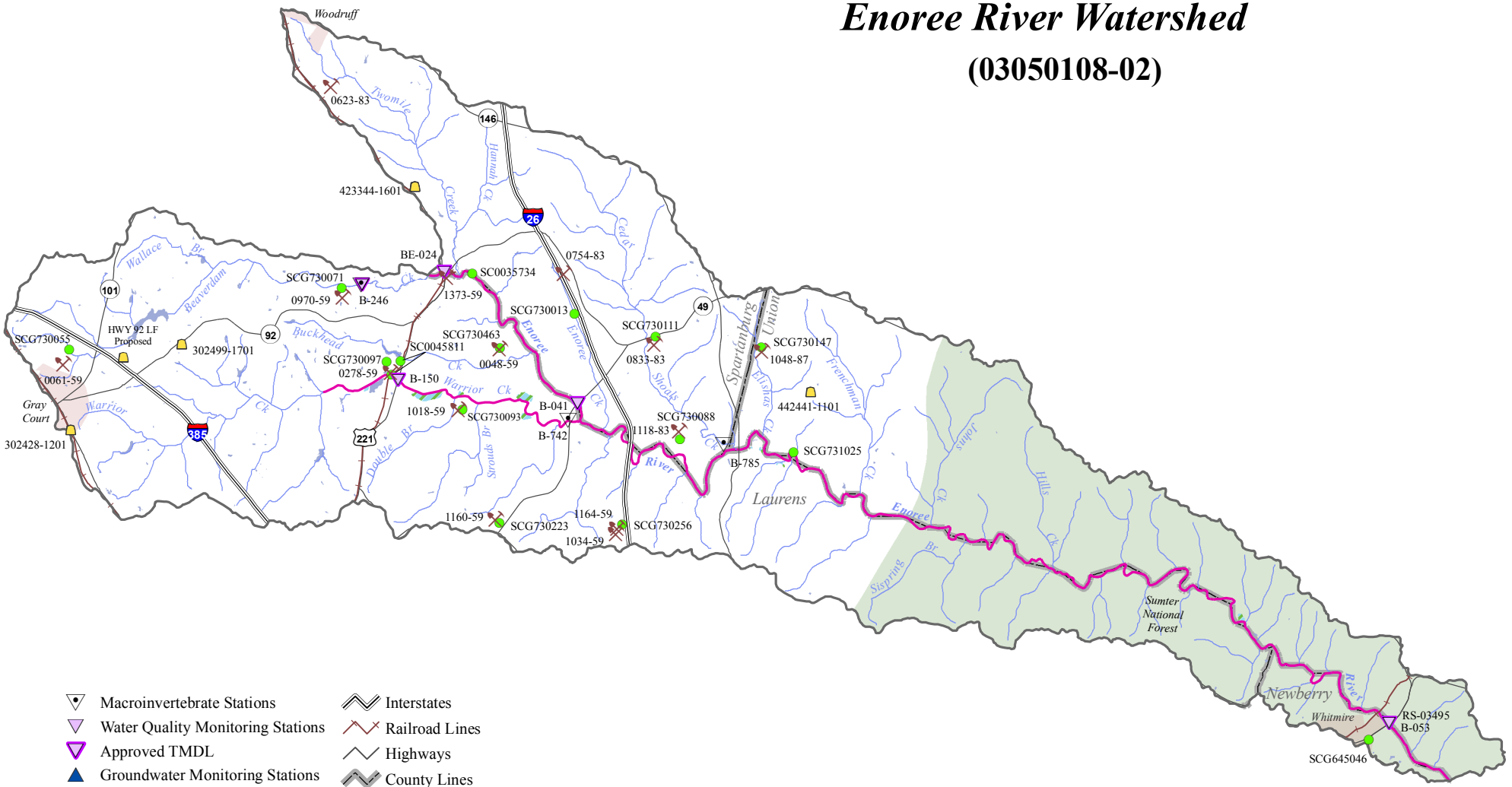
South Carolina Department of Health and Environmental Control

Enoree River Watershed

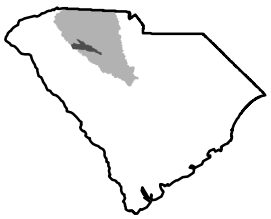
(03050108-01)

Enoree River Watershed

(03050108-02)



- Macroinvertebrate Stations
- Water Quality Monitoring Stations
- Approved TMDL
- Groundwater Monitoring Stations
- Mines
- Landfills
- NPDES Permits
- Land Application Permits
- Natural Swimming Areas
- Lake
- Interstates
- Railroad Lines
- Highways
- County Lines
- Modeled Stream
- Stream
- Wetland
- 10-Digit Hydrologic Units
- Cities/Towns
- Public Lands

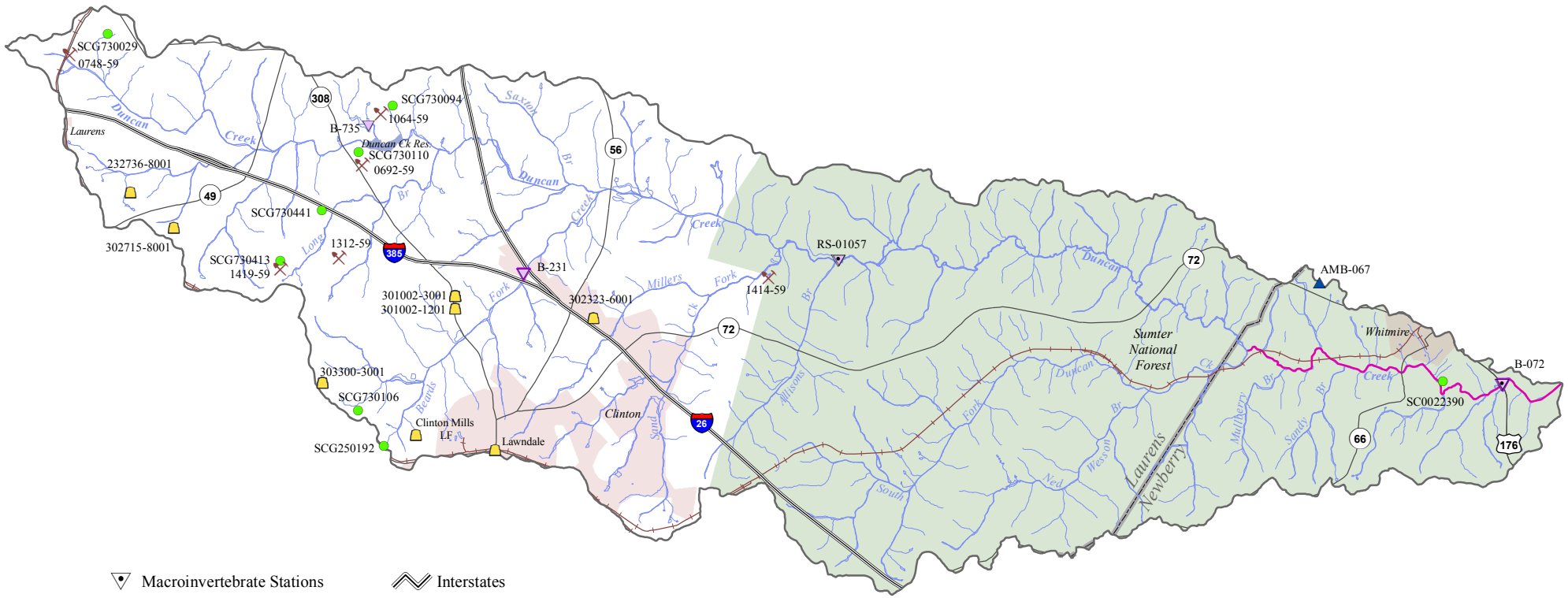


0 1 2 4 6 8 Miles

D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

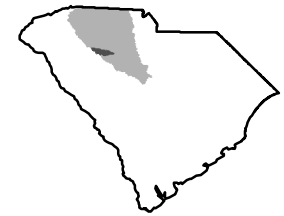
Duncan Creek Watershed

(03050108-03)



- Macroinvertebrate Stations
- Water Quality Monitoring Stations
- Approved TMDL
- Groundwater Monitoring Stations
- Mines
- Landfills
- NPDES Permits
- Land Application Permits
- Natural Swimming Areas
- Lake
- Interstates
- Railroad Lines
- Highways
- County Lines
- Modeled Stream
- Stream
- Wetland
- 10-Digit Hydrologic Units
- Cities/Towns
- Public Lands

D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control



0 1 2 4 Miles

Indian Creek and Enoree River Watersheds
(03050108-04, -05)

APPENDIX B.

Tyger River Basin

Ambient Water Quality Monitoring Site Descriptions

Station #	Type	Class	Description
03050107-01			
B-148	P/W	FW	MIDDLE TYGER RIVER AT SC 14, 2 MI SSW GOWANSVILLE
B-784	BIO	FW	BEAVERDAM CREEK AT SC 357
B-012	S/W	FW	MIDDLE TYGER RIVER AT S-42-63
B-014	W/INT	FW	MIDDLE TYGER RIVER AT S-42-64
03050107-02			
B-348	W	FW	LAKE COOLEY IN FOREBAY NEAR DAM
B-219	S/INT	FW	NORTH TYGER RIVER AT US 29, 7.2 MI W OF SPARTANBURG
B-018A	S/INT	FW	NORTH TYGER RIVER AT S-42-231, 11 MI S OF SPARTANBURG
03050107-03			
B-317	P/W	FW	MUSH CREEK AT SC 253, BELOW TIGERVILLE
RL-04361	RL04	FW	LAKE ROBINSON, 2.3 MI NNW OF DAM
RL-03343	RL03	FW	LAKE ROBINSON, IN COVE 0.5MI SW OF S-23-113 CROSSING
RL-02327	RL02	FW	LAKE ROBINSON, 0.4 MI S OF S-23-113
RL-02453	RL02	FW	LAKE ROBINSON, 0.7 MI S OF S-23-113
RL-04365	RL04	FW	LAKE ROBINSON, 1.0 MI NNW OF DAM
RL-02321	RL02	FW	LAKE ROBINSON, 6.3 MI NNW OF GREER
RL-01025	RL01	FW	LAKE ROBINSON, 5.9 MI NNW OF GREER
CL-100	W	FW	LAKE ROBINSON, IN FOREBAY NEAR DAM
B-341	W	FW	LAKE CUNNINGHAM ,IN FOREBAY NEAR DAM
B-149	S/W	FW	SOUTH TYGER RIVER AT SC 14, 2.9 MI NNW OF GREER
B-263	S/W	FW	SOUTH TYGER RIVER AT SC 290, 3.7 MI E OF GREER
B-625	BIO	FW	MAPLE CREEK AT SR 644
B-005	S/SPRP	FW	SOUTH TYGER RIVER AT S-42-63
B-782	BIO	FW	BENS CREEK AT SC 417
RS-01048	RS01	FW	SOUTH TYGER RIVER OFF COUNTY RD 9978, 3.5 MI NE OF WOODRUFF
B-332	W	FW	SOUTH TYGER RIVER AT S-42-86, 5 MI NE OF WOODRUFF
B-787	BIO	FW	FERGUSON CREEK AT SR 86
03050107-04			
B-321	P/W	FW	TRIBUTARY TO FAIRFOREST CREEK, 200 FEET BELOW S-42-65
B-020	S/W	FW	FAIRFOREST CREEK AT US 221, S OF SPARTANBURG
B-164	S/W	FW	FAIRFOREST CREEK AT S-42-651, 3.5 MI SSE OF SPARTANBURG
B-021	P/BIO/W	FW	FAIRFOREST CREEK AT SC 56
B-235	S/W	FW	KELSEY CREEK AT S-42-321
CL-035	W	FW	LAKE JOHNSON AT SPILLWAY AT S-42-359
RL-01005	RL01	FW	LAKE CRAIG, CROFT STATE PARK, 7.5 MI SE OF SPARTANBURG
RL-01035	RL01	FW	LAKE CRAIG, CROFT STATE PARK, 7.95 MI SE OF SPARTANBURG
CL-033	W	FW	LAKE CRAIG, 45 METERS NW OF DAM
BF-007	S/SPRP	FW	FAIRFOREST CREEK ON COUNTY ROAD 12, SW OF JONESVILLE
B-199	S/W	FW	MITCHELL CREEK AT COUNTY ROAD 233, 2.3 MI SSW OF JONESVILLE
B-781	BIO	FW	MITCHELL CREEK AT SR 19, 1ST REPLICATE OF 2 STA., DSTRM OF BRIDGE
B-067A	S/W	FW	TOSCHS CREEK AT US 176, 2 MI SW OF UNION
B-067B	S/W	FW	TOSCHS CREEK AT ROAD TO TREATMENT PLANT OFF S-44-92, SW OF UNION
BF-008	S/BIO/INT	FW	FAIRFOREST CREEK AT S-44-16, SW OF UNION

Station #	Type	Class	Description
03050107-05			
B-008	P/W	FW	TYGER RIVER AT S-42-50, E OF WOODRUFF
B-019	S/W	FW	JIMMIES CREEK AT S-42-201, 2 MI E OF WOODRUFF
B-786	BIO	FW	JIMMIES CREEK AT STEWART RD, 1MI UPSTREAM OF SR 113
B-733	BIO	FW	DUTCHMAN CREEK AT S-42-511
B-286	S/W	FW	TINKER CREEK AT ROAD TO TREATMENT PLANT, 1.3 MI SSE OF UNION
B-287	S/W	FW	TINKER CREEK AT UNNUMBERED COUNTY ROAD, 1.7 MI SSE OF UNION
B-336	W/BIO	FW	TINKER CREEK AT S-44-278, 9 MI SSE OF UNION
B-051	P/W	FW	TYGER RIVER AT SC 72, 5.5 MI SW OF CARLISLE
B-349	INT	FW	TYGER RIVER AT S-44-35, 3.5 MI S OF CARLISLE
B-777	BIO	FW	CANE CREEK AT SR 359

For further details concerning sampling frequency and parameters sampled, please visit our website at www.scdhec.gov/eqc/admin/html/eqcpubs.html#wqreports for the current State of S.C. Monitoring Strategy.

Water Quality Data

Spreadsheet Legend

Station Information:

STATION NUMBER Station ID

TYPE SCDHEC station type code

- **P** = Primary station, sampled monthly all year round
- **S** = Secondary station, sampled monthly May - October
- **P*** = Secondary station upgraded to primary station parameter coverage and sampling frequency for basin study
- **W** = Special watershed station added for the Broad River Basin study
- **BIO** = Indicates macroinvertebrate community data assessed
- **INT** = Integrator Station (approximates a Primary station)
- **RL** = Random Lake station
- **RO** = Random Open water station
- **RS** = Random Stream station
- **RT** = Random Tide Creek station

WATERBODY NAME Stream or Lake Name

CLASS Stream classification at the point where monitoring station is located

Parameter Abbreviations and Parameter Measurement Units:

DO	Dissolved Oxygen (mg/l)	**NH3**	Ammonia (mg/l)
BOD	Five-Day Biochemical Oxygen Demand (mg/l)	**CD**	Cadmium (ug/l)
pH	pH (SU)	**CR**	Chromium (ug/l)
TP	Total Phosphorus (mg/l)	**CU**	Copper (ug/l)
TN	Total Nitrogen (mg/l)	**PB**	Lead (ug/l)
TURB	Turbidity (NTU)	**HG**	Mercury (ug/l)
TSS	Total Suspended Solids (mg/l)	**NI**	Nickel (ug/l)
BACT	Fecal Coliform Bacteria (#/100 ml)	**ZN**	Zinc (ug/l)

Statistical Abbreviations:

N For *standards compliance*, number of surface samples collected between **January 2000 and December 2004**.
For *trends*, number of surface samples collected between **January 1990 and December 2004**.
For *total phosphorus*, an additional trend period of January 1992 to December 2004 is also reported.

EXC. Number of samples contravening the appropriate standard

% Percentage of samples contravening the appropriate standard

MEAN EXC. Mean of samples that contravened the applied standard

MED For *heavy metals with a human health criterion*, this is the median of all surface samples between January 2000 and December 2004. DL indicates that the median was the detection limit.

MAG Magnitude of any statistically significant trend, average change per year, expressed in parameter measurement units

GEO MEAN Geometric mean of fecal coliform bacteria samples collected between January 2000 and December 2004

Key to Trends:

D Statistically significant decreasing trend in parameter concentration

I Statistically significant increasing trend in parameter concentration

***** No statistically significant trend

Tyger River Basin

STATION				DO	DO	DO	MEAN	TRENDS (90-2004)					
NUMBER	TYPE	WATERBODY NAME	CLASS	N	EXC.	%	EXC.	DO	N	MAG	BOD	N	MAG
0305010702													
B-348	BD	LAKE COOLEY	FW	23	1	4	4.77	D	35	-0.2			
B-315	I*	N TYGER RVR TRIB	FW					*	45	0.12	D	45	-0.162
B-219	INT	N TYGER RVR	FW	53	2	4	3.675	D	118	-0.078	*	109	0.025
B-162	I*	N TYGER RVR	FW	1	0	0	0						
B-018A	INT	N TYGER RVR	FW	50	0	0	0	*	92	-0.013	*	87	0.038
0305010701													
B-148	BD	MIDDLE TYGER RVR	FW	23	0	0	0	I	144	0.03	*	143	0
B-784		BEAVERDAM CK											
B-012	BD	MIDDLE TYGER RVR	FW	17	0	0	0	*	69	0	I	69	0.085
B-014	INT	MIDDLE TYGER RVR	FW	45	0	0	0	*	69	0	I	64	0.085
0305010703													
B-317	BD	MUSH CK	FW	20	0	0	0	*	137	-0.014	*	133	0
RL-04361	RL04	LAKE ROBINSON	FW	12	0	0	0						
RL-03343	RL03	LAKE ROBINSON	FW	12	0	0	0						
RL-02327	RL02	LAKE ROBINSON	FW	11	0	0	0						
RL-02453	RL02	LAKE ROBINSON	FW	11	0	0	0						
RL-04365	RL04	LAKE ROBINSON	FW	12	0	0	0						
RL-02321	RL02	LAKE ROBINSON	FW	11	0	0	0						
RL-01025	RL01	LAKE ROBINSON	FW	11	0	0	0						
CL-100	BD	LAKE ROBINSON	FW	12	0	0	0						
B-341	BD	LAKE CUNNINGHAM	FW	24	0	0	0	D	30	-0.265			
B-149	BD	S TYGER RVR	FW	18	0	0	0	D	69	-0.025	*	69	-0.033
B-263	BD	S TYGER RVR	FW	17	0	0	0	I	70	0.052	*	70	0
B-625		MAPLE CK											
B-005	SPRP	S TYGER RVR	FW	53	0	0	0	I	106	0.034	*	101	0
B-782		BENS CK											
RS-01048	RS01	SOUTH TYGER RVR	FW	11	0	0	0						
B-332	INT	S TYGER RVR	FW	45	0	0	0	*	69	0.01	*	64	0.056
B-787		FERGERSON CK											
0305010705													
B-008	BD	TYGER RVR	FW	23	0	0	0	*	142	0	*	142	0
B-019	BD	JIMMIES CK	FW	17	0	0	0	*	70	0	*	70	0.025
B-786		JIMMIES CK											
B-733		DUTCHMANS CK											
B-286	BD	TINKER CK	FW	18	0	0	0	*	74	0	*	72	0.05
B-287	BD	TINKER CK	FW	17	0	0	0	D	72	-0.033	*	70	0.034
B-336	BD	TINKER CK	FW	12	0	0	0	D	37	-0.131	I	36	0.128
B-051	BD	TYGER RVR	FW	24	0	0	0	*	140	0	I	136	0.062
B-349	INT	TYGER RVR	FW	46	0	0	0	*	46	0.279	I	46	0.634
B-777		CANE CK											

Tyger River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	pH N	pH EXC.	pH %	MEAN EXC.	TRENDS (90-2004) PH	TRENDS (90-2004) N	TRENDS (90-2004) MAG	TURB N	TURB EXC.	TURB %	MEAN EXC.	TRENDS (90-2004) TURB	TRENDS (90-2004) N	TRENDS (90-2004) MAG
0305010702																	
B-348	BD	LAKE COOLEY	FW	23	2	9	5.81	*	35	-0.043	22	0	0	0	*	34	-0.11
B-315	I*	N TYGER RVR TRIB	FW					*	44	-0.033					*	45	-0.08
B-219	INT	N TYGER RVR	FW	53	0	0	0	I	117	0.016	53	3	6	85	D	117	-1.288
B-162	I*	N TYGER RVR	FW								1	0	0	0			
B-018A	INT	N TYGER RVR	FW	51	1	2	5.99	*	93	0	51	5	10	121	D	92	-0.866
0305010701																	
B-148	BD	MIDDLE TYGER RVR	FW	24	0	0	0	I	142	0.019	24	0	0	0	D	145	-0.851
B-784		BEAVERDAM CK															
B-012	BD	MIDDLE TYGER RVR	FW	17	0	0	0	D	68	-0.019	18	1	6	60	*	69	-0.334
B-014	INT	MIDDLE TYGER RVR	FW	45	0	0	0	D	68	-0.033	46	4	9	85	*	70	0
0305010703																	
B-317	BD	MUSH CK	FW	20	1	5	5.97	*	136	0.016	20	3	15	60	D	136	-0.497
RL-04361	RL04	LAKE ROBINSON	FW	12	2	17	8.66				12	1	8	35			
RL-03343	RL03	LAKE ROBINSON	FW	12	0	0	0				12	0	0	0			
RL-02327	RL02	LAKE ROBINSON	FW	11	0	0	0				11	0	0	0			
RL-02453	RL02	LAKE ROBINSON	FW	11	0	0	0				11	0	0	0			
RL-04365	RL04	LAKE ROBINSON	FW	12	1	8	8.59				12	0	0	0			
RL-02321	RL02	LAKE ROBINSON	FW	11	0	0	0				11	0	0	0			
RL-01025	RL01	LAKE ROBINSON	FW	11	1	9	8.51				11	0	0	0			
CL-100	BD	LAKE ROBINSON	FW	12	1	8	5.55				12	0	0	0			
B-341	BD	LAKE CUNNINGHAM	FW	24	1	4	5.9	*	30	-0.022	24	1	4	30	*	30	0.228
B-149	BD	S TYGER RVR	FW	18	0	0	0	I	68	0.03	18	0	0	0	*	69	-0.05
B-263	BD	S TYGER RVR	FW	17	0	0	0	*	69	0.003	18	1	6	110	D	70	-0.404
B-625		MAPLE CK															
B-005	SPRP	S TYGER RVR	FW	53	1	2	5.96	*	105	0.002	54	2	4	285	*	106	-0.06
B-782		BENS CK															
RS-01048	RS01	SOUTH TYGER RVR	FW	11	0	0	0				11	0	0	0			
B-332	INT	S TYGER RVR	FW	45	3	7	5.7767	D	69	-0.038	46	2	4	80	*	70	0.341
B-787		FERGERSON CK															
0305010705																	
B-008	BD	TYGER RVR	FW	23	0	0	0	D	141	-0.013	24	1	4	560	*	142	0
B-019	BD	JIMMIES CK	FW	17	0	0	0	*	70	0	18	1	6	750	*	70	-0.1
B-786		JIMMIES CK															
B-733		DUTCHMANS CK															
B-286	BD	TINKER CK	FW	18	1	6	5.9	*	74	-0.017	18	2	11	327.5	*	74	-0.143
B-287	BD	TINKER CK	FW	17	2	12	5.7	*	72	-0.005	17	5	29	546	*	71	-0.152
B-336	BD	TINKER CK	FW	12	1	8	5.5	*	37	0.008	12	0	0	0	*	37	-0.042
B-051	BD	TYGER RVR	FW	24	1	4	5.8	*	140	-0.013	24	3	13	77.6667	*	140	0
B-349	INT	TYGER RVR	FW	46	0	0	0	*	46	-0.048	48	8	17	125.875	*	48	2.092
B-777		CANE CK															

Tyger River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (92-2004) TP	TRENDS (92-2004) N	TRENDS (92-2004) MAG	TRENDS (90-2004) TP	TRENDS (90-2004) N	TRENDS (90-2004) MAG
0305010702													
B-348	BD	LAKE COOLEY	FW	23	0	0	0						
B-315	I*	N TYGER RVR TRIB	FW					D	33	-0.044	D	45	-0.037
B-219	INT	N TYGER RVR	FW					D	76	0	D	88	0
B-162	I*	N TYGER RVR	FW										
B-018A	INT	N TYGER RVR	FW					*	68	-0.003	*	68	-0.003
0305010701													
B-148	BD	MIDDLE TYGER RVR	FW					D	93	-0.002	D	116	-0.002
B-784		BEAVERDAM CK											
B-012	BD	MIDDLE TYGER RVR	FW					D	44	-0.02	D	55	-0.012
B-014	INT	MIDDLE TYGER RVR	FW					D	50	-0.01	D	50	-0.01
0305010703													
B-317	BD	MUSH CK	FW					*	85	0	*	108	0
RL-04361	RL04	LAKE ROBINSON	FW	12	0	0	0						
RL-03343	RL03	LAKE ROBINSON	FW	12	0	0	0						
RL-02327	RL02	LAKE ROBINSON	FW	11	0	0	0						
RL-02453	RL02	LAKE ROBINSON	FW	11	0	0	0						
RL-04365	RL04	LAKE ROBINSON	FW	12	0	0	0						
RL-02321	RL02	LAKE ROBINSON	FW	11	0	0	0						
RL-01025	RL01	LAKE ROBINSON	FW										
CL-100	BD	LAKE ROBINSON	FW	12	0	0	0						
B-341	BD	LAKE CUNNINGHAM	FW	24	0	0	0						
B-149	BD	S TYGER RVR	FW					*	44	0	D	56	0
B-263	BD	S TYGER RVR	FW					*	46	-0.004	D	57	-0.003
B-625		MAPLE CK											
B-005	SPRP	S TYGER RVR	FW					*	71	0.001	*	83	0
B-782		BENS CK											
RS-01048	RS01	SOUTH TYGER RVR	FW										
B-332	INT	S TYGER RVR	FW					*	50	-0.001	*	50	-0.001
B-787		FERGERSON CK											
0305010705													
B-008	BD	TYGER RVR	FW					*	91	0	*	113	0
B-019	BD	JIMMIES CK	FW					*	45	0	*	57	0
B-786		JIMMIES CK											
B-733		DUTCHMANS CK											
B-286	BD	TINKER CK	FW					*	49	0	*	60	0
B-287	BD	TINKER CK	FW					*	47	0.001	*	59	0
B-336	BD	TINKER CK	FW										
B-051	BD	TYGER RVR	FW					*	86	0	*	108	0
B-349	INT	TYGER RVR	FW					*	36	0	*	36	0
B-777		CANE CK											

Tyger River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (90-2004) TN	TRENDS (90-2004) N	TRENDS (90-2004) MAG	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (90-2004) TSS	TRENDS (90-2004) N	TRENDS (90-2004) MAG
0305010702																	
B-348	BD	LAKE COOLEY	FW	16	0	0	0				11	0	0	0			
B-315	I*	N TYGER RVR TRIB	FW														
B-219	INT	N TYGER RVR	FW					*	53	0.012							
B-162	I*	N TYGER RVR	FW														
B-018A	INT	N TYGER RVR	FW					*	54	-0.014							
0305010701																	
B-148	BD	MIDDLE TYGER RVR	FW					D	136	-0.008							
B-784		BEAVERDAM CK															
B-012	BD	MIDDLE TYGER RVR	FW														
B-014	INT	MIDDLE TYGER RVR	FW					*	53	-0.027							
0305010703																	
B-317	BD	MUSH CK	FW					D	132	-0.007							
RL-04361	RL04	LAKE ROBINSON	FW	11	0	0	0				6	0	0	0			
RL-03343	RL03	LAKE ROBINSON	FW	6	0	0	0				6	0	0	0			
RL-02327	RL02	LAKE ROBINSON	FW	5	0	0	0				5	0	0	0			
RL-02453	RL02	LAKE ROBINSON	FW	5	0	0	0				5	0	0	0			
RL-04365	RL04	LAKE ROBINSON	FW	11	0	0	0				6	0	0	0			
RL-02321	RL02	LAKE ROBINSON	FW	5	0	0	0				5	0	0	0			
RL-01025	RL01	LAKE ROBINSON	FW	6	0	0	0				6	0	0	0			
CL-100	BD	LAKE ROBINSON	FW	11	0	0	0				6	0	0	0			
B-341	BD	LAKE CUNNINGHAM	FW	17	0	0	0				12	0	0	0			
B-149	BD	S TYGER RVR	FW														
B-263	BD	S TYGER RVR	FW														
B-625		MAPLE CK															
B-005	SPRP	S TYGER RVR	FW					D	31	-0.339							
B-782		BENS CK															
RS-01048	RS01	SOUTH TYGER RVR	FW														
B-332	INT	S TYGER RVR	FW					D	55	-0.019							
B-787		FERGERSON CK															
0305010705																	
B-008	BD	TYGER RVR	FW					*	134	-0.002							
B-019	BD	JIMMIES CK	FW														
B-786		JIMMIES CK															
B-733		DUTCHMANS CK															
B-286	BD	TINKER CK	FW														
B-287	BD	TINKER CK	FW														
B-336	BD	TINKER CK	FW					*	32	0.013							
B-051	BD	TYGER RVR	FW					*	129	0.006					*	62	0.626
B-349	INT	TYGER RVR	FW					*	30	0.005							
B-777		CANE CK															

Tyger River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	GEO MEAN	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (90-2004) BACT	TRENDS (90-2004) N	TRENDS (90-2004) MAG	NH3 N	NH3 EXC.	NH3 %
0305010702														
B-348	BD	LAKE COOLEY	FW	2.3567	23	0	0	0	*	34	0	17	0	0
B-315	I*	N TYGER RVR TRIB	FW						*	45	9.707			
B-219	INT	N TYGER RVR	FW	22.6441	53	3	6	1726.667	D	118	-30.988	30	0	0
B-162	I*	N TYGER RVR	FW	57	1	0	0	0				1	0	0
B-018A	INT	N TYGER RVR	FW	487.172	51	28	55	1659.643	*	93	-18.259	31	0	0
0305010701														
B-148	BD	MIDDLE TYGER RVR	FW	359.67	23	12	52	691.6667	*	143	3.277	21	0	0
B-784		BEAVERDAM CK												
B-012	BD	MIDDLE TYGER RVR	FW	290.36	18	8	44	1215	D	69	-18.194	11	0	0
B-014	INT	MIDDLE TYGER RVR	FW	214.296	45	11	24	856.3636	D	69	-15.021	31	0	0
0305010703														
B-317	BD	MUSH CK	FW	466.372	20	10	50	1540	*	137	4.962	19	0	0
RL-04361	RL04	LAKE ROBINSON	FW	7.9105	12	0	0	0				11	0	0
RL-03343	RL03	LAKE ROBINSON	FW	10.2845	12	0	0	0				6	0	0
RL-02327	RL02	LAKE ROBINSON	FW	3.5567	11	0	0	0				5	0	0
RL-02453	RL02	LAKE ROBINSON	FW	3.2209	11	0	0	0				5	0	0
RL-04365	RL04	LAKE ROBINSON	FW	4.6817	12	0	0	0				11	0	0
RL-02321	RL02	LAKE ROBINSON	FW	2.7118	11	0	0	0				5	0	0
RL-01025	RL01	LAKE ROBINSON	FW	2.6699	11	0	0	0				5	0	0
CL-100	BD	LAKE ROBINSON	FW	3.5527	12	0	0	0				11	0	0
B-341	BD	LAKE CUNNINGHAM	FW	26.0715	24	1	4	760	*	30	-1.448	17	0	0
B-149	BD	S TYGER RVR	FW	37.5483	18	1	6	940	*	70	-2.707	11	0	0
B-263	BD	S TYGER RVR	FW	81.404	18	2	11	870	D	71	-11.832	10	0	0
B-625		MAPLE CK												
B-005	SPRP	S TYGER RVR	FW	222.043	54	9	17	1395.556	*	107	-8.936	31	0	0
B-782		BENS CK												
RS-01048	RS01	SOUTH TYGER RVR	FW	162.822	10	1	10	440				7	0	0
B-332	INT	S TYGER RVR	FW	229.09	45	11	24	710.9091	*	69	-0.803	31	0	0
B-787		FERGERSON CK												
0305010705														
B-008	BD	TYGER RVR	FW	316.154	24	6	25	2268.333	*	143	-9.268	23	0	0
B-019	BD	JIMMIES CK	FW	604.781	18	12	67	1843.333	*	71	20.12	11	0	0
B-786		JIMMIES CK												
B-733		DUTCHMANS CK												
B-286	BD	TINKER CK	FW	492.815	18	8	44	4520	*	74	-2.503	9	0	0
B-287	BD	TINKER CK	FW	547.123	17	10	59	1927	*	72	-2	8	0	0
B-336	BD	TINKER CK	FW	372.077	12	4	33	1262.5	*	37	2.249	9	0	0
B-051	BD	TYGER RVR	FW	154.222	24	2	8	1205	*	140	-3.003	21	0	0
B-349	INT	TYGER RVR	FW	220.055	48	10	21	2348	*	48	-9.164	30	0	0
B-777		CANE CK												

Tyger River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.	CU N	CU EXC.	CU %	MEAN EXC.	PB N	PB EXC.	PB %	MEAN EXC.
0305010702																			
B-348	BD	LAKE COOLEY	FW	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0
B-315	I*	N TYGER RVR TRIB	FW																
B-219	INT	N TYGER RVR	FW	16	0	0	0	16	0	0	0	16	0	0	0	16	0	0	0
B-162	I*	N TYGER RVR	FW																
B-018A	INT	N TYGER RVR	FW	16	0	0	0	16	0	0	0	16	2	13	12	16	0	0	0
0305010701																			
B-148	BD	MIDDLE TYGER RVR	FW	8	1	13	28	8	1	13	50	8	1	13	21	8	0	0	0
B-784		BEAVERDAM CK																	
B-012	BD	MIDDLE TYGER RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-014	INT	MIDDLE TYGER RVR	FW	16	0	0	0	16	0	0	0	16	2	13	15.5	16	0	0	0
0305010703																			
B-317	BD	MUSH CK	FW	6	0	0	0	6	1	17	76	6	0	0	0	6	1	17	82
RL-04361	RL04	LAKE ROBINSON	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
RL-03343	RL03	LAKE ROBINSON	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
RL-02327	RL02	LAKE ROBINSON	FW	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
RL-02453	RL02	LAKE ROBINSON	FW	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
RL-04365	RL04	LAKE ROBINSON	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
RL-02321	RL02	LAKE ROBINSON	FW	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
RL-01025	RL01	LAKE ROBINSON	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
CL-100	BD	LAKE ROBINSON	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-341	BD	LAKE CUNNINGHAM	FW	8	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0
B-149	BD	S TYGER RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-263	BD	S TYGER RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-625		MAPLE CK																	
B-005	SPRP	S TYGER RVR	FW	16	0	0	0	16	0	0	0	16	3	19	14.667	16	0	0	0
B-782		BENS CK																	
RS-01048	RS01	SOUTH TYGER RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-332	INT	S TYGER RVR	FW	16	0	0	0	16	0	0	0	16	1	6	12	16	0	0	0
B-787		FERGERSON CK																	
0305010705																			
B-008	BD	TYGER RVR	FW	8	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0
B-019	BD	JIMMIES CK	FW	4	0	0	0	4	0	0	0	4	1	25	17	4	0	0	0
B-786		JIMMIES CK																	
B-733		DUTCHMANS CK																	
B-286	BD	TINKER CK	FW	4	0	0	0	4	0	0	0	4	1	25	28	4	0	0	0
B-287	BD	TINKER CK	FW	4	0	0	0	4	0	0	0	4	1	25	28	4	0	0	0
B-336	BD	TINKER CK	FW	4	0	0	0	4	0	0	0	4	1	25	30	4	0	0	0
B-051	BD	TYGER RVR	FW	8	0	0	0	8	0	0	0	8	1	13	32	8	0	0	0
B-349	INT	TYGER RVR	FW	16	0	0	0	16	0	0	0	16	2	13	37.5	16	0	0	0
B-777		CANE CK																	

Tyger River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	HG N	HG EXC.	HG %	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
0305010702														
B-348	BD	LAKE COOLEY	FW	7	0	0	7	0	0	0	7	0	0	0
B-315	I*	N TYGER RVR TRIB	FW											
B-219	INT	N TYGER RVR	FW	15	0	0	15	0	0	0	16	0	0	0
B-162	I*	N TYGER RVR	FW											
B-018A	INT	N TYGER RVR	FW	15	0	0	15	0	0	0	16	0	0	0
0305010701														
B-148	BD	MIDDLE TYGER RVR	FW	8	0	0	8	1	13	29	8	0	0	0
B-784		BEAVERDAM CK												
B-012	BD	MIDDLE TYGER RVR	FW	4	0	0	4	0	0	0	4	0	0	0
B-014	INT	MIDDLE TYGER RVR	FW	15	0	0	15	0	0	0	16	0	0	0
0305010703														
B-317	BD	MUSH CK	FW	6	0	0	6	0	0	0	6	0	0	0
RL-04361	RL04	LAKE ROBINSON	FW	4	0	0	4	0	0	0	4	0	0	0
RL-03343	RL03	LAKE ROBINSON	FW	4	0	0	4	0	0	0	4	0	0	0
RL-02327	RL02	LAKE ROBINSON	FW	3	0	0	3	0	0	0	3	0	0	0
RL-02453	RL02	LAKE ROBINSON	FW	3	0	0	3	0	0	0	3	0	0	0
RL-04365	RL04	LAKE ROBINSON	FW	4	0	0	4	0	0	0	4	0	0	0
RL-02321	RL02	LAKE ROBINSON	FW	3	0	0	3	0	0	0	3	0	0	0
RL-01025	RL01	LAKE ROBINSON	FW	4	0	0	4	0	0	0	4	0	0	0
CL-100	BD	LAKE ROBINSON	FW	4	0	0	4	0	0	0	4	0	0	0
B-341	BD	LAKE CUNNINGHAM	FW	8	0	0	8	0	0	0	8	0	0	0
B-149	BD	S TYGER RVR	FW	4	0	0	4	0	0	0	4	0	0	0
B-263	BD	S TYGER RVR	FW	4	0	0	4	0	0	0	4	0	0	0
B-625		MAPLE CK												
B-005	SPRP	S TYGER RVR	FW	15	0	0	16	1	6	80	16	0	0	0
B-782		BENS CK												
RS-01048	RS01	SOUTH TYGER RVR	FW	3	0	0	4	0	0	0	4	0	0	0
B-332	INT	S TYGER RVR	FW	15	0	0	15	0	0	0	15	0	0	0
B-787		FERGERSON CK												
0305010705														
B-008	BD	TYGER RVR	FW	8	0	0	8	0	0	0	8	0	0	0
B-019	BD	JIMMIES CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-786		JIMMIES CK												
B-733		DUTCHMANS CK												
B-286	BD	TINKER CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-287	BD	TINKER CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-336	BD	TINKER CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-051	BD	TYGER RVR	FW	8	0	0	8	0	0	0	8	0	0	0
B-349	INT	TYGER RVR	FW	15	0	0	16	0	0	0	16	0	0	0
B-777		CANE CK												

Tyger River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS		DO N	DO EXC.	DO %	MEAN EXC.	TRENDS (90-2004) DO	N	MAG	BOD	N	MAG
0305010704														
B-321	BD	FAIRFOREST CK TRIB	FW		24	2	8	3.425	*	143	-0.001	*	141	-0.02
B-020	BD	FAIRFOREST CK	FW		18	0	0	0	*	72	0.028	*	70	-0.047
B-164	BD	FAIRFOREST CK	FW		18	0	0	0	*	71	-0.036	I	71	0.078
B-021	BD	FAIRFOREST CK	FW		24	0	0	0	*	144	0.012	*	144	0
B-235	BD	KELSEY CK	FW		17	0	0	0	*	71	0	*	71	-0.033
CL-035	BD	LAKE JOHNSON	FW		12	2	17	4.615						
RL-01005	RL01	LAKE CRAIG	FW		11	0	0	0						
RL-01035	RL01	LAKE CRAIG	FW		11	0	0	0						
CL-033	BD	LAKE CRAIG	FW		12	0	0	0						
BF-007	SPRP	FAIRFOREST CK	FW		53	1	2	4.77	I	108	0.086	I	105	0.075
B-199	BD	MITCHELL CK	FW		18	0	0	0	*	74	0	*	73	0.025
B-781		MITCHELL CK												
B-067A	BD	TOSCHS CK	FW		18	0	0	0	*	74	0.022	*	71	0.033
B-067B	BD	TOSCHS CK	FW		17	0	0	0	*	73	0.006	I	69	0.08
BF-008	INT	FAIRFOREST CK	FW		53	2	4	4.8	D	121	-0.029	I	117	0.098

Tyger River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	pH N	pH EXC.	pH %	MEAN EXC.	TRENDS (90-2004) PH	TRENDS (90-2004) N	TRENDS (90-2004) MAG	TURB N	TURB EXC.	TURB %	MEAN EXC.	TRENDS (90-2004) TURB	TRENDS (90-2004) N	TRENDS (90-2004) MAG
0305010704																	
B-321	BD	FAIRFOREST CK TRIB	FW	24	5	21	5.88	D	142	-0.016	24	1	4	100	D	143	-0.495
B-020	BD	FAIRFOREST CK	FW	18	0	0	0	*	69	0.016	18	2	11	90	D	70	-0.471
B-164	BD	FAIRFOREST CK	FW	18	0	0	0	I	70	0.01	18	2	11	80	D	69	-0.419
B-021	BD	FAIRFOREST CK	FW	24	0	0	0	*	143	0.006	24	1	4	130	D	142	-0.663
B-235	BD	KELSEY CK	FW	17	0	0	0	*	70	0.007	17	1	6	120	*	70	-0.159
CL-035	BD	LAKE JOHNSON	FW	12	2	17	8.915				12	0	0	0			
RL-01005	RL01	LAKE CRAIG	FW	11	1	9	8.62				10	0	0	0			
RL-01035	RL01	LAKE CRAIG	FW	11	1	9	8.68				10	0	0	0			
CL-033	BD	LAKE CRAIG	FW	12	2	17	8.93				12	0	0	0			
BF-007	SPRP	FAIRFOREST CK	FW	53	0	0	0	*	108	0	53	7	13	213.571	I	107	0.362
B-199	BD	MITCHELL CK	FW	18	0	0	0	*	74	0	18	1	6	400	*	74	-0.1
B-781		MITCHELL CK															
B-067A	BD	TOSCHS CK	FW	18	1	6	5.7	D	74	-0.029	18	0	0	0	*	73	0.034
B-067B	BD	TOSCHS CK	FW	17	0	0	0	D	73	-0.023	17	0	0	0	*	71	0.063
BF-008	INT	FAIRFOREST CK	FW	53	1	2	5.4	*	121	0	53	5	9	123	*	121	0.017

Tyger River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (92-2004) TP	TRENDS (92-2004) N	TRENDS (92-2004) MAG	TRENDS (90-2004) TP	TRENDS (90-2004) N	TRENDS (90-2004) MAG
0305010704													
B-321	BD	FAIRFOREST CK TRIB	FW					D	94	-0.002	D	116	-0.003
B-020	BD	FAIRFOREST CK	FW					*	46	0	*	57	-0.001
B-164	BD	FAIRFOREST CK	FW					I	46	0.13	I	58	0.052
B-021	BD	FAIRFOREST CK	FW					*	94	0.008	*	115	0.001
B-235	BD	KELSEY CK	FW					*	47	0	*	59	0
CL-035	BD	LAKE JOHNSON	FW	12	4	33	0.08						
RL-01005	RL01	LAKE CRAIG	FW										
RL-01035	RL01	LAKE CRAIG	FW										
CL-033	BD	LAKE CRAIG	FW	12	1	8	0.32						
BF-007	SPRP	FAIRFOREST CK	FW					*	70	0.007	*	80	0.007
B-199	BD	MITCHELL CK	FW					*	50	0	*	61	0
B-781		MITCHELL CK											
B-067A	BD	TOSCHS CK	FW					D	46	-0.121	D	57	-0.083
B-067B	BD	TOSCHS CK	FW					*	45	0	*	55	-0.001
BF-008	INT	FAIRFOREST CK	FW					*	75	-0.002	*	87	-0.002

Tyger River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (90-2004) TN	TRENDS (90-2004) N	TRENDS (90-2004) MAG	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (90-2004) TSS	TRENDS (90-2004) N	TRENDS (90-2004) MAG
0305010704																	
B-321	BD	FAIRFOREST CK TRIB	FW					*	129	-0.066							
B-020	BD	FAIRFOREST CK	FW														
B-164	BD	FAIRFOREST CK	FW														
B-021	BD	FAIRFOREST CK	FW					*	137	0							
B-235	BD	KELSEY CK	FW														
CL-035	BD	LAKE JOHNSON	FW	11	1	9	3.02				6	2	33	92.535			
RL-01005	RL01	LAKE CRAIG	FW	7	0	0	0				5	0	0	0			
RL-01035	RL01	LAKE CRAIG	FW	7	0	0	0				6	0	0	0			
CL-033	BD	LAKE CRAIG	FW	11	0	0	0				6	0	0	0			
BF-007	SPRP	FAIRFOREST CK	FW														
B-199	BD	MITCHELL CK	FW														
B-781		MITCHELL CK															
B-067A	BD	TOSCHS CK	FW														
B-067B	BD	TOSCHS CK	FW														
BF-008	INT	FAIRFOREST CK	FW					*	57	0.01							

Tyger River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	GEO MEAN	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (90-2004) BACT	TRENDS (90-2004) N	TRENDS (90-2004) MAG	NH3 N	NH3 EXC.	NH3 %
0305010704														
B-321	BD	FAIRFOREST CK TRIB	FW	177.841	23	10	43	3296	D	142	-9.36	18	0	0
B-020	BD	FAIRFOREST CK	FW	4421.48	18	18	100	11783.33	*	71	-89.459	10	0	0
B-164	BD	FAIRFOREST CK	FW	1002.71	18	13	72	2245.385	*	71	20.366	11	0	0
B-021	BD	FAIRFOREST CK	FW	464.224	24	17	71	1747.647	*	144	8.895	23	0	0
B-235	BD	KELSEY CK	FW	292.574	17	8	47	945	*	71	-8.27	10	0	0
CL-035	BD	LAKE JOHNSON	FW	13.0637	12	0	0	0				11	0	0
RL-01005	RL01	LAKE CRAIG	FW	2.5261	11	0	0	0				6	0	0
RL-01035	RL01	LAKE CRAIG	FW	2.6334	11	0	0	0				6	0	0
CL-033	BD	LAKE CRAIG	FW	15.9014	12	0	0	0				11	0	0
BF-007	SPRP	FAIRFOREST CK	FW	321.653	53	16	30	3018.125	*	108	7.499	27	0	0
B-199	BD	MITCHELL CK	FW	652.506	18	11	61	1789.091	I	74	14.296	9	0	0
B-781		MITCHELL CK												
B-067A	BD	TOSCHS CK	FW	377.213	18	8	44	1751.25	*	74	-6.687	10	0	0
B-067B	BD	TOSCHS CK	FW	434.551	17	10	59	1353	*	73	-29.805	9	0	0
BF-008	INT	FAIRFOREST CK	FW	236.075	53	12	23	1457.5	*	121	-2.925	34	0	0

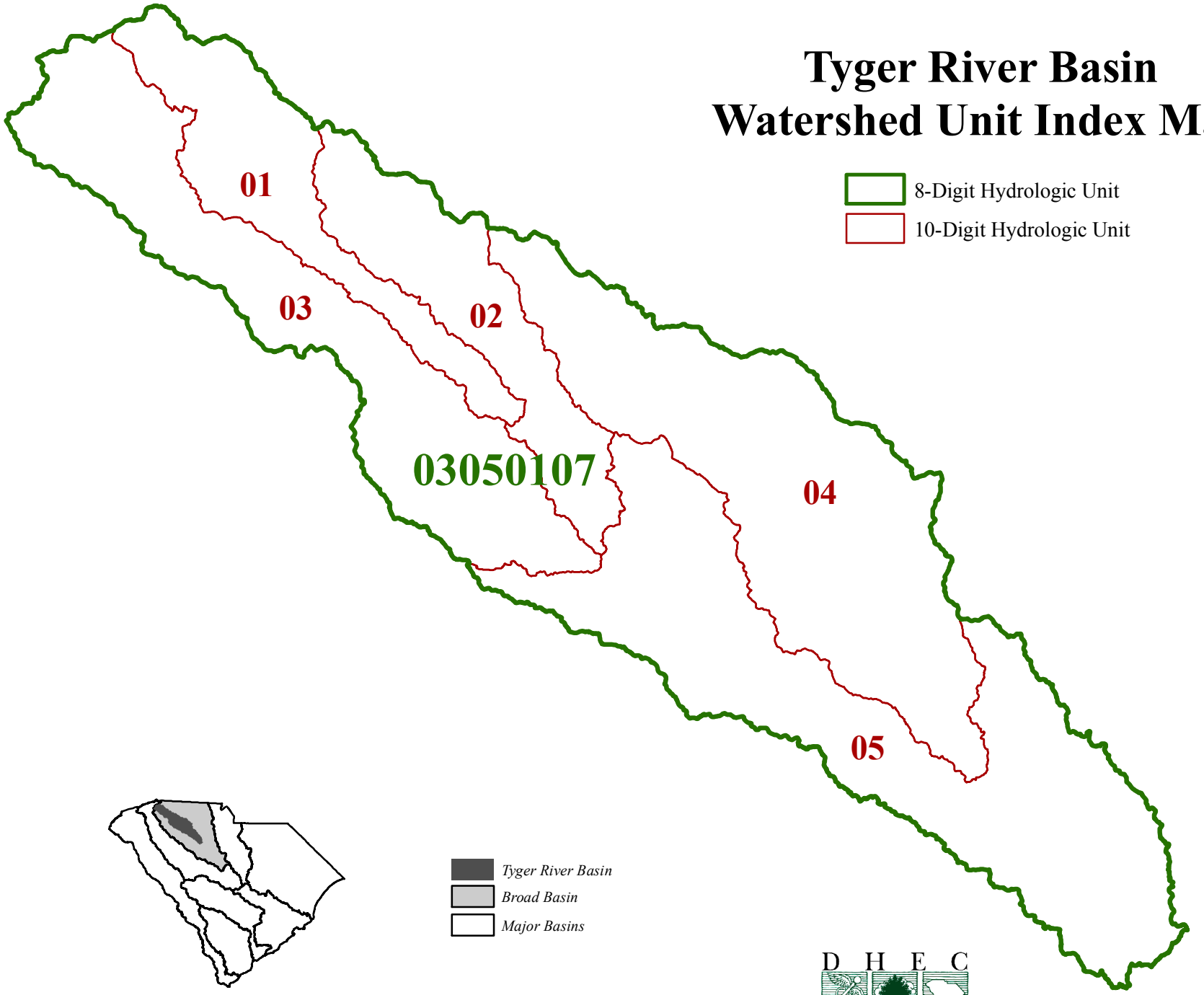
Tyger River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.	CU N	CU EXC.	CU %	MEAN EXC.	PB N	PB EXC.	PB %	MEAN EXC.
0305010704																			
B-321	BD	FAIRFOREST CK TRIB	FW	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0
B-020	BD	FAIRFOREST CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-164	BD	FAIRFOREST CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-021	BD	FAIRFOREST CK	FW	8	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0
B-235	BD	KELSEY CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
CL-035	BD	LAKE JOHNSON	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
RL-01005	RL01	LAKE CRAIG	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
RL-01035	RL01	LAKE CRAIG	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
CL-033	BD	LAKE CRAIG	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
BF-007	SPRP	FAIRFOREST CK	FW	15	0	0	0	15	0	0	0	15	0	0	0	15	0	0	0
B-199	BD	MITCHELL CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-781		MITCHELL CK																	
B-067A	BD	TOSCHS CK	FW	4	0	0	0	4	0	0	0	4	1	25	27	4	0	0	0
B-067B	BD	TOSCHS CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
BF-008	INT	FAIRFOREST CK	FW	17	0	0	0	17	0	0	0	17	3	18	28.667	17	0	0	0

Tyger River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	HG N	HG EXC.	HG %	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
0305010704														
B-321	BD	FAIRFOREST CK TRIB	FW	7	0	0	7	4	57	35	7	1	14	100
B-020	BD	FAIRFOREST CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-164	BD	FAIRFOREST CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-021	BD	FAIRFOREST CK	FW	8	0	0	8	0	0	0	8	0	0	0
B-235	BD	KELSEY CK	FW	4	0	0	4	0	0	0	4	0	0	0
CL-035	BD	LAKE JOHNSON	FW	4	0	0	4	0	0	0	4	0	0	0
RL-01005	RL01	LAKE CRAIG	FW	4	0	0	4	0	0	0	4	0	0	0
RL-01035	RL01	LAKE CRAIG	FW	4	0	0	4	0	0	0	4	0	0	0
CL-033	BD	LAKE CRAIG	FW	4	0	0	4	0	0	0	4	0	0	0
BF-007	SPRP	FAIRFOREST CK	FW	14	0	0	15	0	0	0	15	0	0	0
B-199	BD	MITCHELL CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-781		MITCHELL CK												
B-067A	BD	TOSCHS CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-067B	BD	TOSCHS CK	FW	4	0	0	4	0	0	0	4	0	0	0
BF-008	INT	FAIRFOREST CK	FW	16	0	0	17	0	0	0	17	0	0	0

Tyger River Basin
Watershed Unit Index Map



8-Digit Hydrologic Unit

10-Digit Hydrologic Unit

Tyger River Basin

Broad Basin

Major Basins

0 5 10 20 Miles

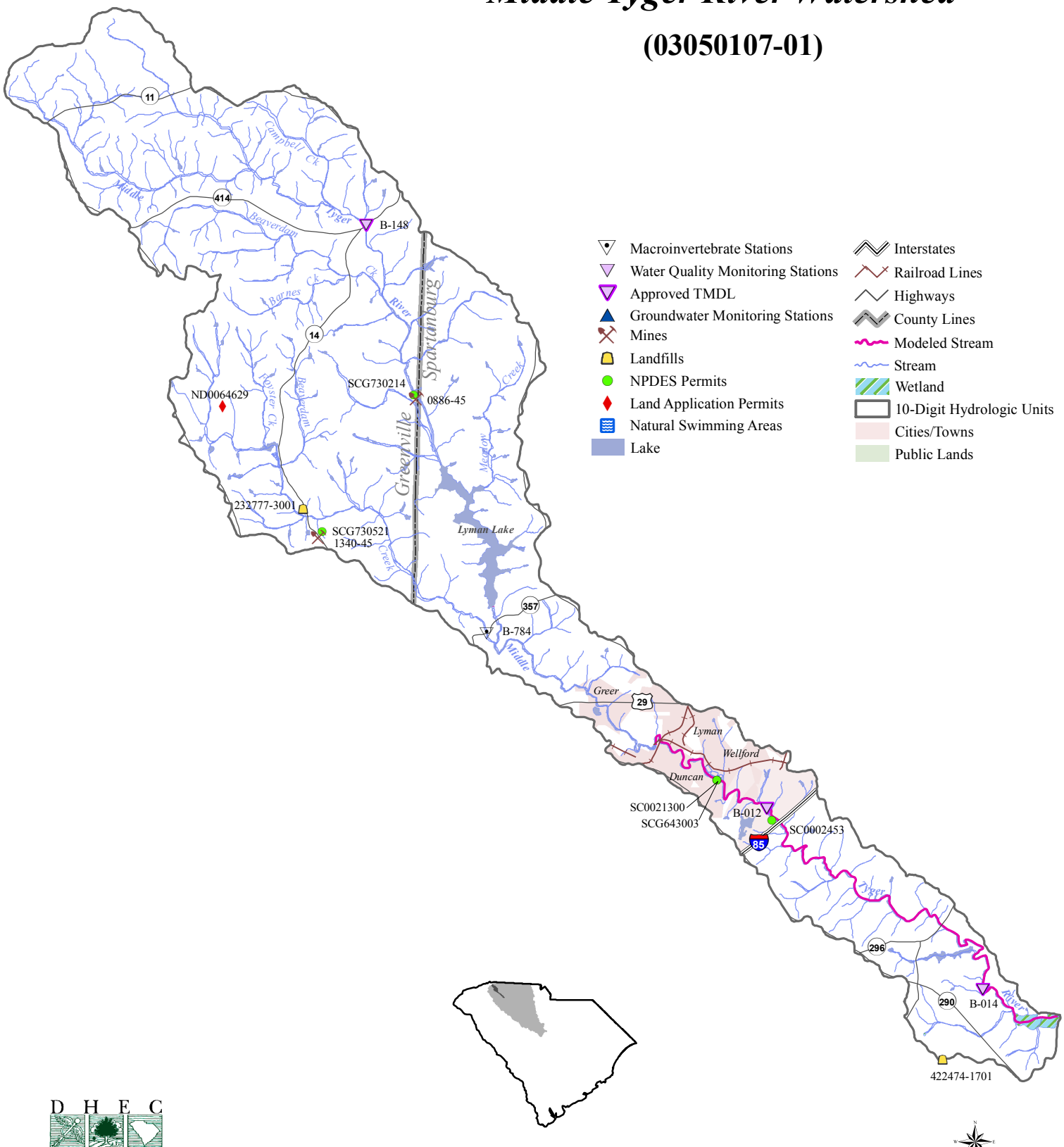
D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

Middle Tyger River Watershed

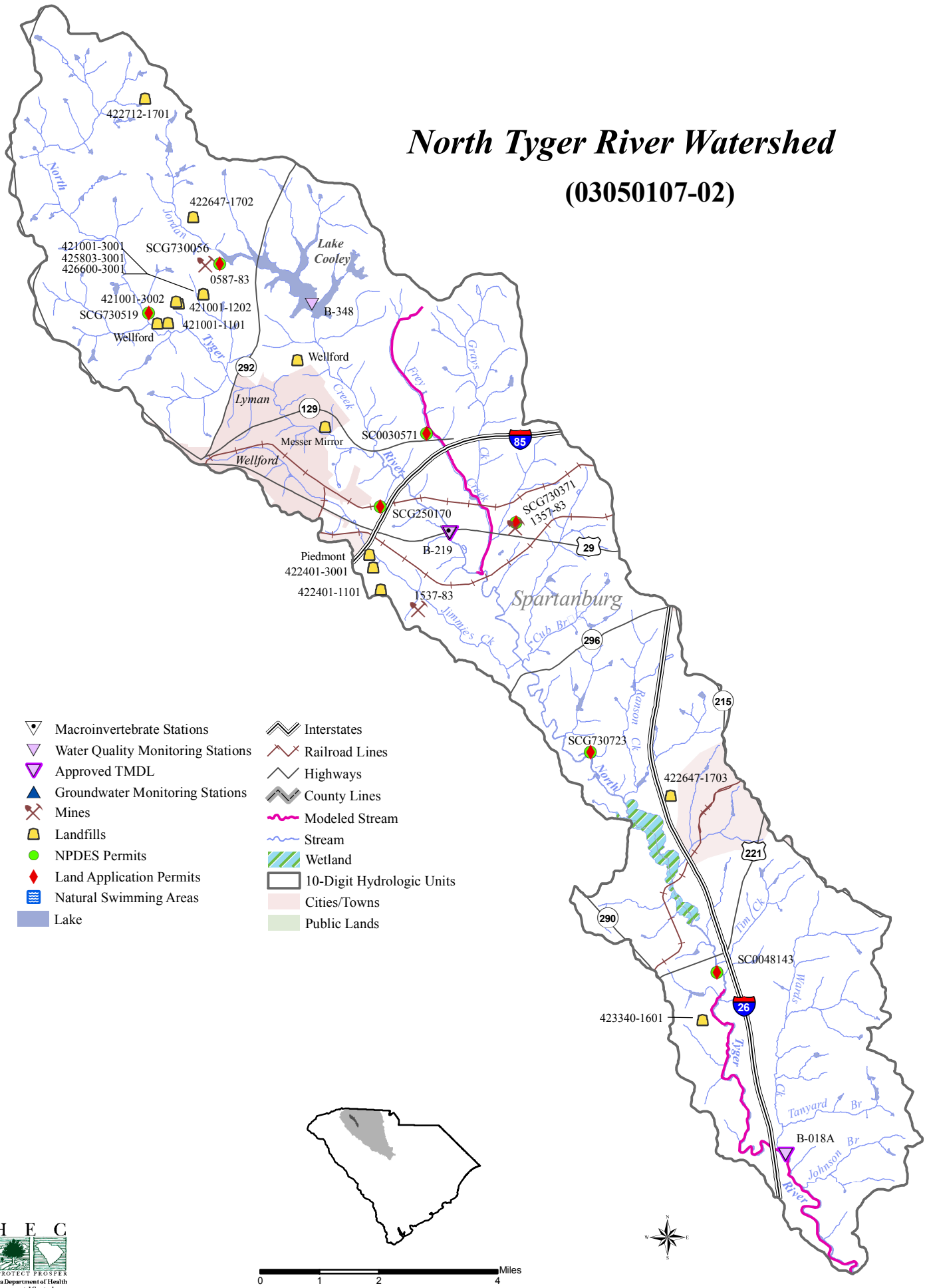
(03050107-01)



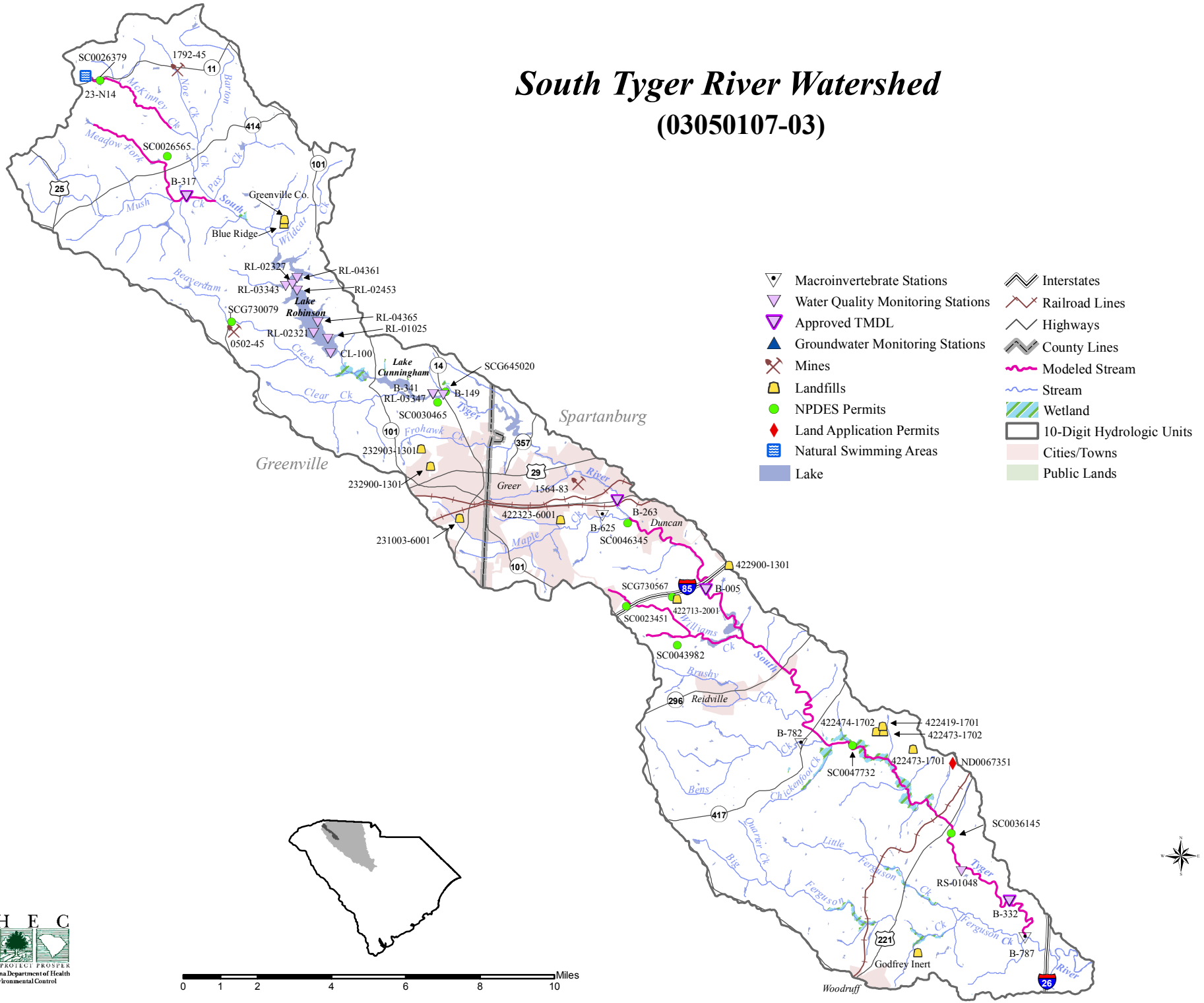
D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control


North Tyger River Watershed
(03050107-02)
422712-1701
North Tyger River
422647-1702
421001-3001
425803-3001
426600-3001
SCG730056
0587-83
Lake Cooley
421001-3002
SCG730519
421001-1202
421001-1101
Wellford
B-348
Wellford
292
Lyman
129
Messer Mirror
Wellford
SC0030571
Frey Creek
Grays Creek
85
SCG730371
1357-83
SCG250170
B-219
29
Piedmont
422401-3001
422401-1101
1537-83
Jimmies Ck
Cub Br
Spartanburg
296
Johnson Ck
215
SCG730723
North Tyger River
422647-1703
221
290
Fim Ck
SC0048143
26
423340-1601
Tyger River
Tanyard Br
B-018A
Johnson Br
Macroinvertebrate Stations
Water Quality Monitoring Stations
Approved TMDL
Groundwater Monitoring Stations
Mines
Landfills
NPDES Permits
Land Application Permits
Natural Swimming Areas
Lake
Interstates
Railroad Lines
Highways
County Lines
Modeled Stream
Stream
Wetland
10-Digit Hydrologic Units
Cities/Towns
Public Lands
Miles
0
1
2
4
D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

South Tyger River Watershed
(03050107-03)



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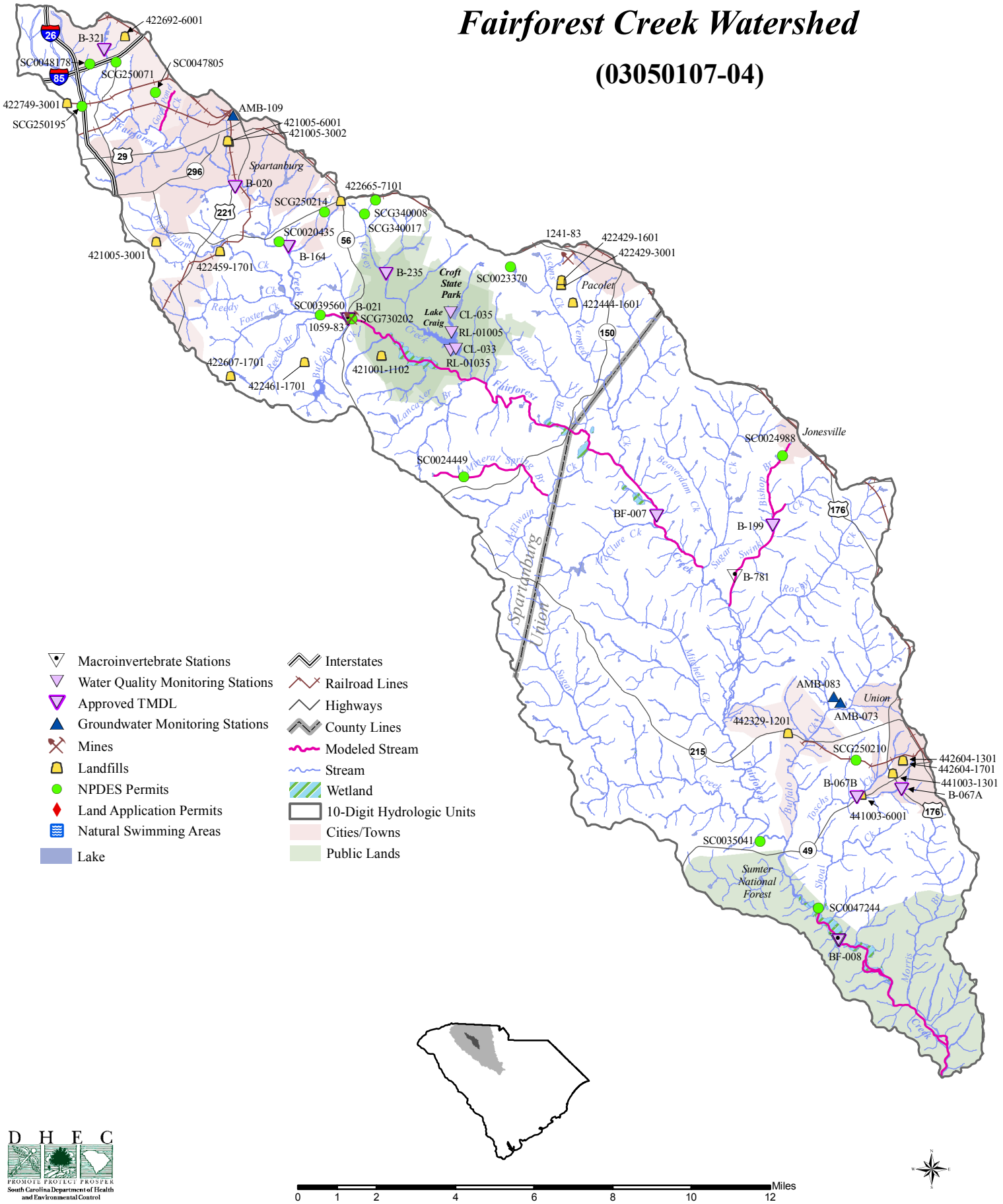
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

Fairforest Creek Watershed

(03050107-04)



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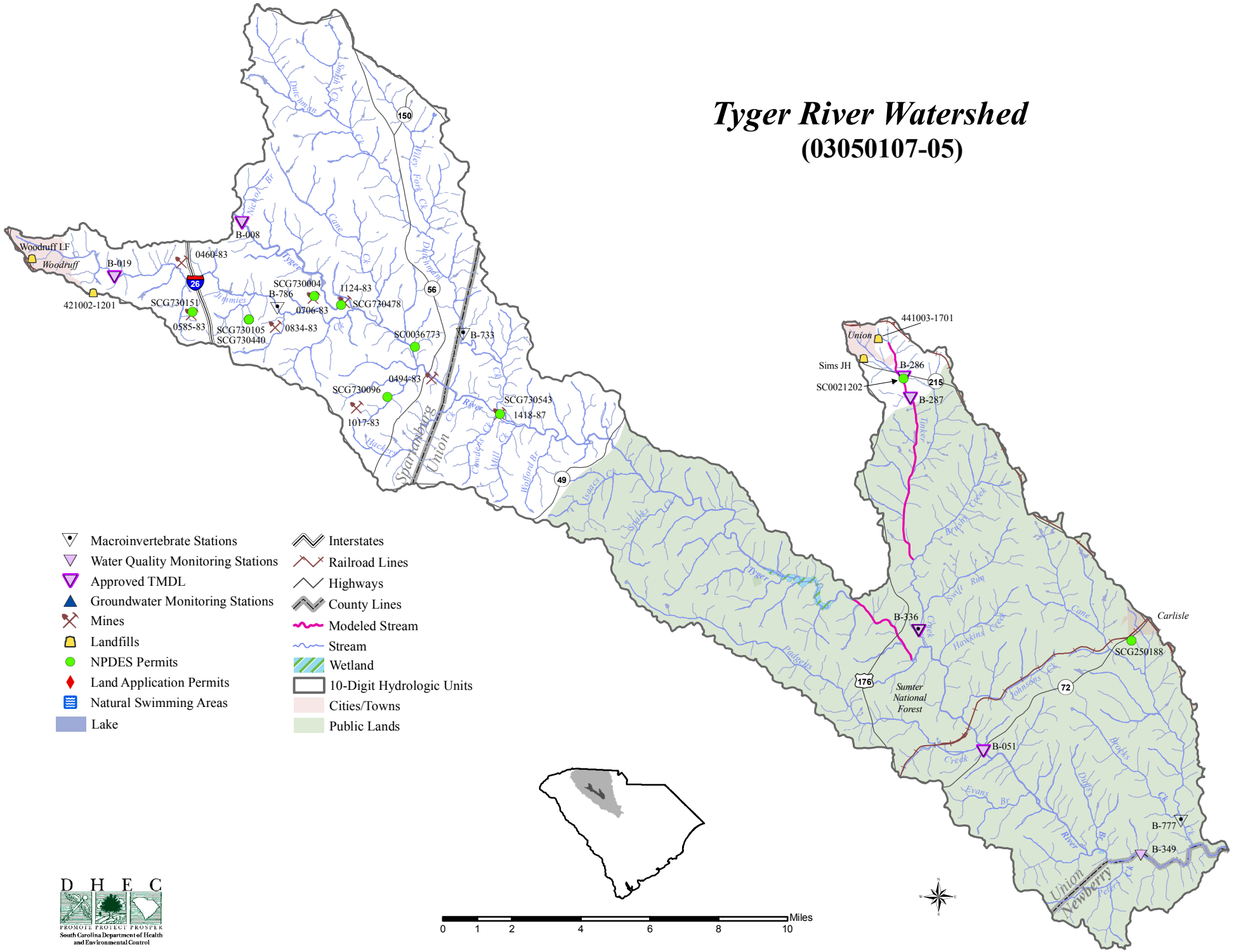
PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

Tyger River Watershed
(03050107-05)



APPENDIX C.

Broad River Basin

Ambient Water Quality Monitoring Site Descriptions

Station #	Type	Class	Description
03050105-05			
THERE IS NO WATER QUALITY MONITORING IN THIS WATERSHED.			
03050105-08			
B-740	BIO	FW	BUFFALO CREEK AT SC 198
B-119	S/W	FW	BUFFALO CREEK AT S-11-213, 2.2 MI NNW OF BLACKSBURG
B-057	S/INT	FW	BUFFALO CREEK AT SC 5, 1 MI W OF BLACKSBURG
03050105-09			
B-333	W/BIO/INT	FW	KINGS CREEK AT S-11-209, 3 MI W OF SMYRNA
03050105-10			
RL-02301	RL02	FW	LAKE THICKETTY NEAR SE SHORE APPROX. 1.0 MI FROM MACEDONIA
B-342	W	FW	LAKE THICKETTY IN FOREBAY NEAR DAM
RL-03457	RL03	FW	LAKE THICKETTY IN FOREBAY NEAR DAM (B-342)
B-059	S/W	FW	IRENE CREEK AT S-11-307, 2.5 MI W OF GAFFNEY
B-095	S/W	FW	THICKETTY CREEK AT S-11-164
RS-04376	BIO/RS04	FW	LITTLE THICKETTY CREEK AT S-42-307, 1.2 MI NE OF COWPENS
B-128	S/W	FW	LIMESTONE CREEK AT S-11-301
B-133	S/BIO/W	FW	THICKETTY CREEK AT SC 18, 8.3 MI S OF GAFFNEY
RS-01028	RS01	FW	THICKETTY CREEK AT S-11-104 BIG PINE HUNT CLUB, 9.0 MI E OF PACOLET
B-334	W/BIO	FW	GILKEY CREEK AT S-11-231, 9 MI SE OF GAFFNEY
B-062	S/INT	FW	THICKETTY CREEK AT SC 211, 2 MI ABOVE JUNCTION WITH BROAD RIVER
03050105-11			
B-739	BIO	FW	BULLOCK CREEK AT S-46-40
B-325	S/W	FW	CLARK FORK INTO CRAWFORD LAKE NEAR SC 161 & 705
B-737	W	FW	LAKE YORK IN KINGS MOUNTAIN STATE PARK
B-326	S/W	FW	LONG BRANCH ON SC 216, BELOW KINGS MOUNTAIN PARK REC. AREA
B-157	BIO	FW	CLARK FORK AT S-46-63
B-159	S/INT	FW	BULLOCK CREEK AT SC 97, 4.8 MI S OF HICKORY GROVE
03050105-12			
B-099-7	BIO	ORW	VAUGHN CREEK AT UNNUMBERED ROAD, 0.4 MI S OF S-23-319
B-099A	S/W	FW	LAKE LANIER ON # 1 INLET IN GREENVILLE COUNTY
B-099B	S/W	FW	LAKE LANIER AT DAM IN GREENVILLE COUNTY
B-719	BIO	FW	NORTH PACOLET RIVER AT S-42-128
B-301	S/W	FW	PAGE CREEK AT S-42-1258, 1.7 MI SE LANDRUM
B-026	P/W	FW	NORTH PACOLET RIVER AT S-42-956, 6.5 MI E LANDRUM
B-126	W/INT	FW	NORTH PACOLET RIVER AT S-42-978, 1 MI SE OF FINGERVILLE
RS-03514	RS03/BIO	FW	OBED CREEK AT UNNUMBERED CHRISTOPHER RD OFF SC11
B-791	BIO	FW	OBED CREEK AT SR 42

Station #	Type	Class	Description
03050105-13			
B-720	BIO	FW	SOUTH PACOLET RIVER AT S-42-183
B-103	S/W	FW	SPIVEY CREEK AT S-42-208, 2.5 MI SSE OF LANDRUM
B-790	BIO	FW	MOTLOW CREEK AT SR 888
B-302	S/INT	FW	SOUTH PACOLET RIVER AT S-42-866, 1 MI SE CAMPOBELLO
B-340	W	FW	LAKE BOWEN NEAR HEADWATERS, 0.4 KM W OF S-42-37
B-339	W/INT	FW	LAKE BOWEN IN FOREBAY NEAR DAM
B-113	S/W	FW	SPARTANBURG RESERVOIR #1 ON S-42-213 NE OF INMA
03050105-14			
B-221	S/W	FW	LAWSONS FORK CREEK AT S-42-40, BELOW INMAN MILL EFFLUENT
B-277	S/W	FW	LAWSONS FORK CREEK AT S-42-218, 2.7 MI SSE OF INMAN
B-278	S/W	FW	LAWSONS FORK CREEK AT UNNUMBERED ROAD BELOW MILLIKEN CHEMICAL
RS-02320	RS02	FW	MEADOW CREEK AT S-42-822
B-531	BIO	FW	MEADOW CREEK AT SR 56
BL-005	S/W	FW	LAWSONS FORK CREEK AT S-42-79 AT VALLEY FALLS
BL-001	P/BIO/INT	FW	LAWSONS FORK CREEK AT S-42-108
03050105-15			
B-028	S/W	FW	PACOLET R. AT S-42-55, BELOW CONFL. OF N. & S. PACOLET RIVERS
RL-02323	RL02	FW	LAKE BLALOCK AT S-42-43
B-783	BIO	FW	BUCK CREEK AT PEACH SHED RD
B-259	S/W	FW	LITTLE BUCK CREEK AT COUNTY ROAD, 2.3 MI SW OF CHESNEE
RL-01019	RL01	FW	LAKE BLALOCK, 4 MI SSW OF CHESNEE & 0.3 MI NE OF BUCK CK CHURCH
RL-03345	RL03	FW	LAKE BLALOCK , 0.1 MI SE OF BUCK CK CHURCH/ S-42-189
RL-04367	RL04	FW	LAKE BLALOCK , 0.9 MI UPLAKE OF US 221
RL-04389	RL04	FW	LAKE BLALOCK, 0.6 MI UPLAKE OF US 221
RL-04363	RL04	FW	LAKE BLALOCK , 0.3 MI UPLAKE OF US 221
RL-04461	RL04	FW	LAKE BLALOCK AT US 221
B-347	W	FW	LAKE BLALOCK IN FOREBAY NEAR DAM
B-163A	S/W	FW	PACOLET RIVER AT BRIDGE ON S-42-737, 2.9 MI NW OF COWPENS
B-191	S/W	FW	POTTER BRANCH ON ROAD 30, BELOW OUTFALL FROM HOUSING PROJECT
B-331	W/INT	FW	PACOLET RIVER AT S-42-59, BEACON LIGHT ROAD IN CLIFTON
BP-001	S/W	FW	PACOLET RIVER ABOVE DAM AT PACOLET MILLS
B-048	P/INT	FW	PACOLET RIVER AT SC 105, 6 MI ABOVE CONFLUENCE WITH BROAD RIVER
03050105-16			
RS-03352	RS03	FW	ROSS CREEK AT S-11-63 (ELLIS FERRY RD), 6 MI N OF GAFFNEY
B-789	BIO	FW	ROSS CREEK AT SR 577
B-788	BIO	FW	BOWEN RIVER AT SR 83
B-042	P/INT	FW	BROAD RIVER AT SC 18, 4 MI NE GAFFNEY
B-088	S/W	FW	CANOE CREEK AT S-11-245, 2 MI W OF BLACKSBURG
RL-01029	RL01	FW	LAKE WHELCHEL, 2.7 MI N OF GAFFNEY
RL-03341	RL03	FW	L. WHELCHEL, 2.7 MI NE OF GAFFNEY, FROM GAFFNEY PW BOAT LANDING
B-056	INT	FW	CHEROKEE CREEK AT US 29, 3 MI E OF GAFFNEY
B-679	BIO	FW	CHEROKEE CREEK AT SC 329
B-211	S/W	FW	PEOPLES CREEK AT UNIMPROVED ROAD, 2.3 MI E OF GAFFNEY
B-100	S/W	FW	FURNACE CREEK AT S-11-50, 6 MI E OF GAFFNEY
B-323	S/W	FW	DOOLITTLE CREEK AT S-11-100, 1.25 MI SE OF BLACKSBURG
B-343	W	FW	LAKE CHEROKEE IN FOREBAY NEAR DAM
B-330	S/W	FW	GUYONMOORE CREEK AT S-46-233

Station #	Type	Class	Description
03050105-16 (continued)			
RS-02482	RS02	FW	GUYONMOORE CREEK GOOSE HOLLOW RD FROM S-46-816 WOODEN BRIDGE
B-044	P/INT	FW	BROAD RIVER AT SC 211, 12 MI SE OF GAFFNEY
03050106-01			
B-086	S/W	FW	ROSS BRANCH AT SC 49, SW OF YORK
RS-03349	RS03	FW	SUSYBOLE CREEK AT S-46-59, 4 MI NW OF LOWRYS
B-136	W/BIO/INT	FW	TURKEY CREEK AT SC 9, 14 MI NW OF CHESTER
03050106-02			
B-074	S/W	FW	DRY FORK AT S-12-304, 2 MI SW OF CHESTER
CL-023	W	FW	CHESTER STATE PARK LAKE, 100 M E OF SPILLWAY
B-075	S/BIO/INT	FW	SANDY RIVER AT SC 215, 2.5 MI ABOVE CONFLUENCE WITH BROAD RIVER
03050106-03			
RL-01010	RL01	FW	LAKE LONG, 7.75 MI NE OF UNION & 3.5 MI W OF SUMTER NAT'L FOREST
B-344	W	FW	LAKE JOHN D. LONG IN FOREBAY NEAR DAM
B-243	S	FW	TRIBUTARY TO MENG CREEK AT CULVERT ON S-44-384, 3 MI E OF UNION
B-064	S	FW	MENG CREEK AT SC 49, 2.5 MI E OF UNION
B-155	W/BIO	FW	BROWNS CREEK AT S-44-86, 8 MI E OF UNION
B-335	W	FW	GREGORYS CREEK AT S-44-86, 8 MI E OF UNION
RS-04543	RS04	FW	CLARKS CREEK AT USFS RD 305 IN WOODS FERRY PK, 13 MI W OF CHESTER
B-778	BIO	FW	NEALS CREEK AT SR 86
B-046	P	FW	BROAD RIVER AT SC 72/215/121, 3 MI E OF CARLISLE
03050106-04			
RS-04527	RS04	FW	MCCLURES CREEK AT SC 215, 6.7MI SE OF CARLISLE
B-143	BIO	FW	BEAVER CREEK AT SR 95
B-047	S/W	FW	BROAD RIVER AT SC 34, 14 MI NE OF NEWBERRY
B-151	BIO	FW	HELLERS CREEK AT SR 97
B-346	W	FW	PARR RESERVOIR 4.8 KM N OF DAM, UPSTREAM OF MONTICELLO RESERVOIR
B-831	BIO	FW	CANNONS CREEK AT OXNER ROAD
B-751	BIO	FW	CANNONS CREEK AT US 176
B-328	P/W	FW	MONTICELLO RES., UPPER IMPOUNDMENT AT BUOY IN MIDDLE OF LAKE
RL-04370	RL04	FW	MONTICELLO RES., 1.7 MI NW OF MONTICELLO
B-327	P/INT	FW	MONTICELLO RESERVOIR, LOWER IMPOUNDMENT BETWEEN LARGE ISLANDS
RL-04374	RL04	FW	MONTICELLO RES., 3.57 MI N OF JENKINSVILLE
RS-03343	RS03	FW	MUD CREEK AT MOORE BRANCH ROAD OFF SC 219, 0.5 MI SE S-36-499
B-345	W/INT	FW	PARR RESERVOIR IN FOREBAY NEAR DAM
03050106-05			
B-123	S/W	FW	WINNSBORO BRANCH AT US 321, ABOVE WINNSBORO MILLS OUTFALL
B-077	S/W	FW	WINNSBORO BRANCH BELOW PLANT OUTFALL
B-102	W/BIO/INT	FW	JACKSON CREEK AT S-20-54, 5 MI W OF WINNSBORO
B-338	W/INT	FW	MILL CREEK AT S-20-48, 10 MI SW OF WINNSBORO
B-145	S/BIO/W	FW	LITTLE RIVER AT S-20-60, 3.1 MI SW OF JENKINSVILLE
B-350	INT	FW	LITTLE RIVER AT SC 215, 1.5 MI NE OF CONFLUENCE WITH BROAD RIVER

Station #	Type	Class	Description
03050106-06			
B-320	W/BIO	FW	BIG CEDAR CREEK AT SC 215
RS-02453	INT	FW	BIG CEDAR CREEK AT SC 215
03050106-07			
B-236	P/W	FW	BROAD RIVER AT SC 213, 2.5 MI SW OF JENKINSVILLE
RS-03517	RS03	FW	CRIMS CREEK TRIBUTARY AT S-36-25
B-800	BIO	FW	CRIMS CREEK AT SC 213
B-801	BIO	FW	WATEREE CREEK AT SR 698
B-110	S	FW	ELIZABETH LAKE AT SPILLWAY ON US 21
B-316	P	FW	CRANE CREEK AT S-40-43 UNDER I-20, NORTH COLUMBIA
B-280	P/BIO	FW	SMITH BRANCH AT N MAIN ST (US 21) IN COLUMBIA
B-337	W	FW	BROAD RIVER AT US 176 (BROAD RIVER ROAD) IN COLUMBIA
B-080	P/W	FW	BROAD RIVER DIVERSION CANAL AT COLUMBIA WATER PLANT

For further details concerning sampling frequency and parameters sampled, please visit our website at www.scdhec.gov/eqc/admin/html/eqcpubs.html#wqreports for the current State of S.C. Monitoring Strategy.

Water Quality Data

Spreadsheet Legend

Station Information:

STATION NUMBER Station ID

TYPE SCDHEC station type code

- **P** = Primary station, sampled monthly all year round
- **S** = Secondary station, sampled monthly May - October
- **P*** = Secondary station upgraded to primary station parameter coverage and sampling frequency for basin study
- **W** = Special watershed station added for the Broad River Basin study
- **BIO** = Indicates macroinvertebrate community data assessed
- **INT** = Integrator Station (approximates a Primary station)
- **RL** = Random Lake station
- **RO** = Random Open water station
- **RS** = Random Stream station
- **RT** = Random Tide Creek station

WATERBODY NAME Stream or Lake Name

CLASS Stream classification at the point where monitoring station is located

Parameter Abbreviations and Parameter Measurement Units:

DO	Dissolved Oxygen (mg/l)	**NH3**	Ammonia (mg/l)
BOD	Five-Day Biochemical Oxygen Demand (mg/l)	**CD**	Cadmium (ug/l)
pH	pH (SU)	**CR**	Chromium (ug/l)
TP	Total Phosphorus (mg/l)	**CU**	Copper (ug/l)
TN	Total Nitrogen (mg/l)	**PB**	Lead (ug/l)
TURB	Turbidity (NTU)	**HG**	Mercury (ug/l)
TSS	Total Suspended Solids (mg/l)	**NI**	Nickel (ug/l)
BACT	Fecal Coliform Bacteria (#/100 ml)	**ZN**	Zinc (ug/l)

Statistical Abbreviations:

N For *standards compliance*, number of surface samples collected between January 2000 and December 2004.
For *trends*, number of surface samples collected between January 1990 and December 2004.
For *total phosphorus*, an additional trend period of January 1992 to December 2004 is also reported.

EXC. Number of samples contravening the appropriate standard

% Percentage of samples contravening the appropriate standard

MEAN EXC. Mean of samples that contravened the applied standard

MED For *heavy metals with a human health criterion*, this is the median of all surface samples between January 2000 and December 2004. DL indicates that the median was the detection limit.

MAG Magnitude of any statistically significant trend, average change per year, expressed in parameter measurement units

GEO MEAN Geometric mean of fecal coliform bacteria samples collected between January 2000 and December 2004

Key to Trends:

D Statistically significant decreasing trend in parameter concentration

I Statistically significant increasing trend in parameter concentration

***** No statistically significant trend

Broad River Basin

STATION				DO	DO	DO	MEAN	TRENDS (90-2004)					
NUMBER	TYPE	WATERBODY NAME	CLASS	N	EXC.	%	EXC.	DO	N	MAG	BOD	N	MAG
0305010516													
RS-03352	RS03	ROSS CREEK	FW	9	0	0	0						
B-789		GOFORTH CK											
B-788		BOWEN RVR											
B-042	INT	BROAD RVR	FW	56	1	2	2.38	*	173	-0.03	I	168	0.067
B-088	BD	CANOE CK	FW	18	0	0	0	I	74	0.18	*	72	-0.144
RL-01029	RL01	LAKE WHELCHEL	FW	12	0	0	0						
RL-03341	RL03	LAKE WELCHEL	FW	12	0	0	0						
B-056	INT	CHEROKEE CK	FW	50	1	2	4.06	*	118	0.005	*	114	0
B-679		CHEROKEE CK											
B-211	BD	PEOPLES CK	FW	18	0	0	0	*	74	0.004	*	73	0.04
B-100	BD	PEOPLES CK	FW	18	0	0	0	*	86	0.003	I	82	0.05
B-323	BD	DOOLITTLE CK	FW	18	0	0	0	D	74	-0.06	I	73	0.06
B-343	BD	LAKE CHEROKEE	FW	12	0	0	0						
B-330	BD	GUYONMOORE CK	FW	18	0	0	0	D	74	-0.037	I	71	0.058
RS-02482	RS02	GUYON MOORE CK	FW	7	0	0	0						
B-044	INT	BROAD RVR	FW	56	2	4	3.62	D	172	-0.034	I	169	0.061
0305010508													
B-740		BUFFALO CK											
B-119	BD	BUFFALO CK	FW	18	0	0	0	*	73	-0.031	*	71	0.014
B-057	INT	BUFFALO CK	FW	49	0	0	0	*	117	-0.026	*	116	0.034
0305010509													
B-333	INT	KINGS CK	FW	40	1	3	3.9	*	65	-0.016	*	63	0.012
0305010510													
RL-02301	RL02	LAKE THICKETTY	FW	10	0	0	0						
B-342	BD	LAKE THICKETTY	FW	23	0	0	0						
RL-03457	RL03	LAKE THICKETTY	FW	12	0	0	0						
B-059	BD	IRENE CK	FW	18	0	0	0	D	74	-0.05	I	72	0.099
B-095	BD	THICKETTY CK	FW	18	0	0	0	*	74	-0.014	*	72	0.018
RS-04376	RS04	LITTLE THICKETTY CK	FW	11	0	0	0						
B-128	BD	LIMESTONE CK	FW	18	0	0	0	D	75	-0.035	*	73	0.049
B-133	BD	THICKETTY CK	FW	18	0	0	0	*	74	-0.017	I	72	0.085
RS-01028	RS01	THICKETTY CK	FW	9	0	0	0						
B-334	BD	GILKEY CK	FW	11	0	0	0	*	36	-0.008	I	35	0.123
B-062	INT	THICKETTY CK	FW	49	1	2	4.18	D	116	-0.04	I	114	0.075

STATION				pH	pH	pH	MEAN	TRENDS (90-2004)			TURB	TURB	TURB	MEAN	TRENDS (90-2004)		
NUMBER	TYPE	WATERBODY NAME	CLASS	N	EXC.	%	EXC.	PH	N	MAG	N	EXC.	%	EXC.	TURB	N	MAG
0305010516																	
RS-03352	RS03	ROSS CREEK	FW	9	0	0	0				9	1	11	120			
B-789		GOFORTH CK															
B-788		BOWEN RVR															
B-042	INT	BROAD RVR	FW	55	1	2	5.9	*	172	0	55	6	11	275	*	171	-0.064
B-088	BD	CANOE CK	FW	18	0	0	0	*	74	-0.015	18	1	6	75	*	73	0.326
RL-01029	RL01	LAKE WHELCHEL	FW	12	0	0	0				12	0	0	0			
RL-03341	RL03	LAKE WELCHEL	FW	12	3	25	5.91				12	0	0	0			
B-056	INT	CHEROKEE CK	FW	50	0	0	0	*	118	0	50	5	10	214.4	*	118	-0.118
B-679		CHEROKEE CK															
B-211	BD	PEOPLES CK	FW	18	1	6	8.6	D	74	-0.035	18	1	6	100	*	74	0.006
B-100	BD	PEOPLES CK	FW	18	1	6	5.7	D	86	-0.045	18	3	17	158.333	*	85	-0.089
B-323	BD	DOOLITTLE CK	FW	18	0	0	0	D	74	-0.033	18	3	17	130	*	74	0.429
B-343	BD	LAKE CHEROKEE	FW	12	1	8	5.9				12	0	0	0			
B-330	BD	GUYONMOORE CK	FW	18	1	6	5.9	*	74	0.008	18	2	11	120	*	74	0.125
RS-02482	RS02	GUYON MOORE CK	FW	7	0	0	0				7	1	14	180			
B-044	INT	BROAD RVR	FW	56	0	0	0	*	172	0	56	5	9	143	*	172	-0.056
0305010508																	
B-740		BUFFALO CK															
B-119	BD	BUFFALO CK	FW	18	0	0	0	*	73	0.004	18	3	17	296.667	*	73	-0.357
B-057	INT	BUFFALO CK	FW	49	2	4	7.285	*	117	-0.01	49	6	12	258.333	*	116	-0.219
0305010509																	
B-333	INT	KINGS CK	FW	40	2	5	5.415	*	65	0.033	40	3	8	273.333	*	65	-0.084
0305010510																	
RL-02301	RL02	LAKE THICKETTY	FW	10	0	0	0				10	0	0	0			
B-342	BD	LAKE THICKETTY	FW	23	1	4	5.55				23	1	4	33			
RL-03457	RL03	LAKE THICKETTY	FW	12	0	0	0				12	1	8	42			
B-059	BD	IRENE CK	FW	18	1	6	5.6	*	74	0.011	18	3	17	163.333	I	72	0.635
B-095	BD	THICKETTY CK	FW	18	0	0	0	*	74	0	18	2	11	74.5	*	74	-0.118
RS-04376	RS04	LITTLE THICKETTY CK	FW	11	1	9	5.94				11	0	0	0			
B-128	BD	LIMESTONE CK	FW	18	0	0	0	*	75	0	18	0	0	0	I	75	0.402
B-133	BD	THICKETTY CK	FW	18	2	11	5.85	*	74	0.01	18	4	22	259.75	*	74	0
RS-01028	RS01	THICKETTY CK	FW	9	0	0	0				9	0	0	0			
B-334	BD	GILKEY CK	FW	11	1	9	5.9	*	36	0	11	1	9	64	*	36	0.126
B-062	INT	THICKETTY CK	FW	48	0	0	0	*	115	0.004	49	7	14	225.714	*	116	-0.378

Broad River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (92-2004) TP	TRENDS (92-2004) N	TRENDS (92-2004) MAG	TRENDS (90-2004) TP	TRENDS (90-2004) N	TRENDS (90-2004) MAG
0305010516													
RS-03352	RS03	ROSS CREEK	FW										
B-789		GOFORTH CK											
B-788		BOWEN RVR											
B-042	INT	BROAD RVR	FW					I	111	0.002	*	134	0
B-088	BD	CANOE CK	FW					*	47	-0.048	*	59	0.022
RL-01029	RL01	LAKE WHELCHEL	FW										
RL-03341	RL03	LAKE WELCHEL	FW	12	0	0	0						
B-056	INT	CHEROKEE CK	FW					D	75	-0.033	D	87	-0.043
B-679		CHEROKEE CK											
B-211	BD	PEOPLES CK	FW					*	47	0	*	59	-0.001
B-100	BD	PEOPLES CK	FW					D	51	-0.035	D	62	-0.023
B-323	BD	DOOLITTLE CK	FW					*	47	0	*	58	0
B-343	BD	LAKE CHEROKEE	FW	12	0	0	0						
B-330	BD	GUYONMOORE CK	FW					*	49	0	*	60	0
RS-02482	RS02	GUYON MOORE CK	FW										
B-044	INT	BROAD RVR	FW					*	112	-0.002	*	134	0
0305010508													
B-740		BUFFALO CK											
B-119	BD	BUFFALO CK	FW					D	47	-0.069	D	59	-0.041
B-057	INT	BUFFALO CK	FW					D	74	-0.052	D	86	-0.041
0305010509													
B-333	INT	KINGS CK	FW					D	43	0	D	43	0
0305010510													
RL-02301	RL02	LAKE THICKETTY	FW	10	1	10	0.13						
B-342	BD	LAKE THICKETTY	FW	23	1	4	0.06						
RL-03457	RL03	LAKE THICKETTY	FW	12	0	0	0						
B-059	BD	IRENE CK	FW					*	48	0	*	60	0
B-095	BD	THICKETTY CK	FW					*	50	-0.017	*	61	0
RS-04376	RS04	LITTLE THICKETTY CK	FW										
B-128	BD	LIMESTONE CK	FW					*	50	0	*	62	0
B-133	BD	THICKETTY CK	FW					D	50	-0.005	*	62	-0.002
RS-01028	RS01	THICKETTY CK	FW										
B-334	BD	GILKEY CK	FW										
B-062	INT	THICKETTY CK	FW					D	79	-0.002	*	90	-0.001

Broad River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (90-2004) TN	TRENDS (90-2004) N	TRENDS (90-2004) MAG	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (90-2004) TSS	TRENDS (90-2004) N	TRENDS (90-2004) MAG
0305010516																	
RS-03352	RS03	ROSS CREEK	FW														
B-789		GOFORTH CK															
B-788		BOWEN RVR															
B-042	INT	BROAD RVR	FW					I	150	0.008							
B-088	BD	CANOE CK	FW														
RL-01029	RL01	LAKE WHELCHEL	FW	7	0	0	0				6	2	33	43.65			
RL-03341	RL03	LAKE WELCHEL	FW	6	0	0	0				6	0	0	0			
B-056	INT	CHEROKEE CK	FW					D	57	-0.092							
B-679		CHEROKEE CK															
B-211	BD	PEOPLES CK	FW														
B-100	BD	PEOPLES CK	FW					*	40	-0.089							
B-323	BD	DOOLITTLE CK	FW														
B-343	BD	LAKE CHEROKEE	FW	11	0	0	0				6	1	17	88.53			
B-330	BD	GUYONMOORE CK	FW														
RS-02482	RS02	GUYON MOORE CK	FW														
B-044	INT	BROAD RVR	FW					I	149	0.008							
0305010508																	
B-740		BUFFALO CK															
B-119	BD	BUFFALO CK	FW					*	66	0.009					*	55	0.251
B-057	INT	BUFFALO CK	FW					*	93	0.006					*	83	-0.083
0305010509																	
B-333	INT	KINGS CK	FW					I	49	0.015							
0305010510																	
RL-02301	RL02	LAKE THICKETTY	FW	4	0	0	0				6	0	0	0			
B-342	BD	LAKE THICKETTY	FW	18	0	0	0				12	0	0	0			
RL-03457	RL03	LAKE THICKETTY	FW	6	0	0	0				6	0	0	0			
B-059	BD	IRENE CK	FW														
B-095	BD	THICKETTY CK	FW														
RS-04376	RS04	LITTLE THICKETTY CK	FW														
B-128	BD	LIMESTONE CK	FW														
B-133	BD	THICKETTY CK	FW														
RS-01028	RS01	THICKETTY CK	FW														
B-334	BD	GILKEY CK	FW					I	34	0.014							
B-062	INT	THICKETTY CK	FW					*	57	-0.015							

Broad River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	GEO MEAN	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (90-2004) BACT	TRENDS (90-2004) N	TRENDS (90-2004) MAG	NH3 N	NH3 EXC.	NH3 %
0305010516														
RS-03352	RS03	ROSS CREEK	FW	93.8402	9	1	11	510				5	0	0
B-789		GOFORTH CK												
B-788		BOWEN RVR												
B-042	INT	BROAD RVR	FW	74.4219	56	7	13	2928.571	D	172	-13.849	41	0	0
B-088	BD	CANOE CK	FW	511.407	18	9	50	2003.333	I	74	36.961	12	0	0
RL-01029	RL01	LAKE WHELCHEL	FW	3.9327	12	0	0	0				7	0	0
RL-03341	RL03	LAKE WELCHEL	FW	7.8486	12	0	0	0				6	0	0
B-056	INT	CHEROKEE CK	FW	157.995	50	5	10	2862	D	118	-65.381	35	0	0
B-679		CHEROKEE CK												
B-211	BD	PEOPLES CK	FW	524.365	18	8	44	4706.25	*	74	-47.747	12	0	0
B-100	BD	PEOPLES CK	FW	290.431	18	4	22	6525	D	85	-19.31	18	0	0
B-323	BD	DOOLITTLE CK	FW	337.785	18	4	22	4565	*	74	15.336	12	0	0
B-343	BD	LAKE CHEROKEE	FW	4.1962	12	0	0	0				11	0	0
B-330	BD	GUYONMOORE CK	FW	162.011	18	1	6	2300	*	74	-1.187	11	0	0
RS-02482	RS02	GUYON MOORE CK	FW	173.353	7	1	14	1200				3	0	0
B-044	INT	BROAD RVR	FW	65.2379	56	6	11	700	D	172	-3.33	40	0	0
0305010508														
B-740		BUFFALO CK												
B-119	BD	BUFFALO CK	FW	265.983	18	3	17	8333.333	*	73	-9.91	18	0	0
B-057	INT	BUFFALO CK	FW	225.475	49	7	14	7942.857	D	117	-13.608	35	0	0
0305010509														
B-333	INT	KINGS CK	FW	209.217	40	6	15	1406.667	*	65	-5.833	27	0	0
0305010510														
RL-02301	RL02	LAKE THICKETTY	FW	32.7629	10	0	0	0				4	0	0
B-342	BD	LAKE THICKETTY	FW	3.6707	23	0	0	0				18	0	0
RL-03457	RL03	LAKE THICKETTY	FW	9.1463	12	0	0	0				6	0	0
B-059	BD	IRENE CK	FW	296.262	18	5	28	3828	*	74	-8.594	11	0	0
B-095	BD	THICKETTY CK	FW	217.959	18	3	17	2646.667	*	74	-9.517	11	0	0
RS-04376	RS04	LITTLE THICKETTY CK	FW	237.87	11	3	27	540				9	0	0
B-128	BD	LIMESTONE CK	FW	769.049	18	12	67	1710	*	75	39.644	11	0	0
B-133	BD	THICKETTY CK	FW	237.529	17	5	29	842	*	73	-16.354	11	0	0
RS-01028	RS01	THICKETTY CK	FW	243.076	9	1	11	580				6	0	0
B-334	BD	GILKEY CK	FW	77.4608	11	0	0	0	*	36	-7.796	11	0	0
B-062	INT	THICKETTY CK	FW	184.977	49	8	16	1973.75	*	117	-7.361	33	0	0

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STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.	CU N	CU EXC.	CU %	MEAN EXC.	PB N	PB EXC.	PB %	MEAN EXC.
0305010516																			
RS-03352	RS03	ROSS CREEK	FW	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
B-789		GOFORTH CK																	
B-788		BOWEN RVR																	
B-042	INT	BROAD RVR	FW	19	0	0	0	19	0	0	0	19	2	11	17	19	0	0	0
B-088	BD	CANOE CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
RL-01029	RL01	LAKE WHELCHEL	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
RL-03341	RL03	LAKE WELCHEL	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-056	INT	CHEROKEE CK	FW	17	0	0	0	17	0	0	0	17	1	6	11	17	0	0	0
B-679		CHEROKEE CK																	
B-211	BD	PEOPLES CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-100	BD	PEOPLES CK	FW	6	0	0	0	6	0	0	0	6	0	0	0	6	0	0	0
B-323	BD	DOOLITTLE CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-343	BD	LAKE CHEROKEE	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-330	BD	GUYONMOORE CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
RS-02482	RS02	GUYON MOORE CK	FW	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0
B-044	INT	BROAD RVR	FW	19	0	0	0	19	0	0	0	19	0	0	0	19	0	0	0
0305010508																			
B-740		BUFFALO CK																	
B-119	BD	BUFFALO CK	FW	10	0	0	0	10	0	0	0	10	1	10	13	10	0	0	0
B-057	INT	BUFFALO CK	FW	21	0	0	0	21	0	0	0	21	2	10	16.5	21	0	0	0
0305010509																			
B-333	INT	KINGS CK	FW	14	1	7	19	14	0	0	0	14	1	7	16	14	0	0	0
0305010510																			
RL-02301	RL02	LAKE THICKETTY	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-342	BD	LAKE THICKETTY	FW	8	0	0	0	8	0	0	0	8	1	13	710	8	1	13	55
RL-03457	RL03	LAKE THICKETTY	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-059	BD	IRENE CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-095	BD	THICKETTY CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
RS-04376	RS04	LITTLE THICKETTY CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-128	BD	LIMESTONE CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-133	BD	THICKETTY CK	FW	4	0	0	0	4	1	25	60	4	1	25	25	4	0	0	0
RS-01028	RS01	THICKETTY CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-334	BD	GILKEY CK	FW	4	0	0	0	4	0	0	0	4	1	25	18	4	0	0	0
B-062	INT	THICKETTY CK	FW	17	0	0	0	17	0	0	0	16	3	19	19	17	0	0	0

Broad River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	HG N	HG EXC.	HG %	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
0305010516														
RS-03352	RS03	ROSS CREEK	FW	3	0	0	3	0	0	0	3	0	0	0
B-789		GOFORTH CK												
B-788		BOWEN RVR												
B-042	INT	BROAD RVR	FW	19	0	0	19	0	0	0	19	0	0	0
B-088	BD	CANOE CK	FW	4	0	0	4	0	0	0	4	0	0	0
RL-01029	RL01	LAKE WHELCHEL	FW	4	0	0	4	0	0	0	4	0	0	0
RL-03341	RL03	LAKE WELCHEL	FW	4	0	0	4	0	0	0	4	0	0	0
B-056	INT	CHEROKEE CK	FW	17	0	0	17	0	0	0	17	0	0	0
B-679		CHEROKEE CK												
B-211	BD	PEOPLES CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-100	BD	PEOPLES CK	FW	6	0	0	6	0	0	0	6	0	0	0
B-323	BD	DOOLITTLE CK	FW	4	0	0	4	0	0	0	4	1	25	100
B-343	BD	LAKE CHEROKEE	FW	4	0	0	4	0	0	0	4	0	0	0
B-330	BD	GUYONMOORE CK	FW	4	0	0	4	0	0	0	4	0	0	0
RS-02482	RS02	GUYON MOORE CK	FW	2	0	0	2	0	0	0	2	0	0	0
B-044	INT	BROAD RVR	FW	19	0	0	19	0	0	0	19	0	0	0
0305010508														
B-740		BUFFALO CK												
B-119	BD	BUFFALO CK	FW	10	0	0	10	0	0	0	10	0	0	0
B-057	INT	BUFFALO CK	FW	21	0	0	21	0	0	0	21	0	0	0
0305010509														
B-333	INT	KINGS CK	FW	14	0	0	14	0	0	0	14	0	0	0
0305010510														
RL-02301	RL02	LAKE THICKETTY	FW	4	0	0	4	0	0	0	4	0	0	0
B-342	BD	LAKE THICKETTY	FW	8	0	0	8	0	0	0	8	1	13	320
RL-03457	RL03	LAKE THICKETTY	FW	4	0	0	4	0	0	0	4	0	0	0
B-059	BD	IRENE CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-095	BD	THICKETTY CK	FW	4	0	0	4	0	0	0	4	0	0	0
RS-04376	RS04	LITTLE THICKETTY CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-128	BD	LIMESTONE CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-133	BD	THICKETTY CK	FW	4	0	0	4	1	25	84	4	0	0	0
RS-01028	RS01	THICKETTY CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-334	BD	GILKEY CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-062	INT	THICKETTY CK	FW	17	0	0	17	0	0	0	17	0	0	0

Broad River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	DO N	DO EXC.	DO %	MEAN EXC.	TRENDS (90-2004) DO	N	MAG	BOD	N	MAG
0305010511													
B-739		BULLOCK CK											
B-325	BD	CLARK FORK TO CRAWFORD LAKE	FW	18	2	11	3.05	*	74	-0.02	*	73	0.033
B-737	BD	LAKE YORK	FW	9	0	0	0						
B-326	BD	LONG BRANCH	FW	18	0	0	0	*	75	-0.059	I	74	0.05
B-157		CLARK CK											
B-159	INT	BULLOCK CK	FW	49	2	4	3.785	D	117	-0.044	I	114	0.091
0305010512													
B-099-7		VAUGHN CK											
B-099A	BD	LAKE LANIER	FW	16	0	0	0	D	69	-0.06	*	67	0.011
B-099B	BD	LAKE LANIER	FW	17	0	0	0	*	68	-0.025	*	68	-0.02
B-719		N PACOLET RVR											
B-301	BD	PAGE CK	FW	18	0	0	0	D	71	-0.05	*	67	0
B-026	BD	N PACOLET RVR	FW	25	0	0	0	D	144	-0.025	D	139	-0.02
B-126	INT	N PACOLET RVR	FW	46	0	0	0	*	69	-0.017	I	63	0.139
RS-03514	RS03	OBED CREEK	FW	12	0	0	0						
B-791		OBED CK											
0305010513													
B-720		S PACOLET RVR											
B-103	BD	SPIVEY CK	FW	18	0	0	0	*	83	-0.021	*	78	-0.013
B-790		MOTLOW CK											
B-302	INT	S PACOLET RVR	FW	52	0	0	0	*	136	-0.019	*	110	-0.017
B-340	BD	LAKE BOWEN	FW	12	0	0	0						
B-339	INT	LAKE BOWEN	FW	45	0	0	0	*	51	-0.153	I	49	0.378
B-113	BD	LAKE, SPARTANBURG RESERVOIR #1	FW	18	0	0	0	*	69	-0.017	D	66	-0.057

Broad River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	pH N	pH EXC.	pH %	MEAN EXC.	TRENDS (90-2004) PH	TRENDS (90-2004) N	TRENDS (90-2004) MAG	TURB N	TURB EXC.	TURB %	MEAN EXC.	TRENDS (90-2004) TURB	TRENDS (90-2004) N	TRENDS (90-2004) MAG
0305010511																	
B-739		BULLOCK CK															
B-325	BD	CLARK FORK TO CRAWFORD LAKE	FW	18	1	6	5.49	*	73	-0.005	18	0	0	0	*	73	-0.126
B-737	BD	LAKE YORK	FW	9	1	11	5.7				10	0	0	0			
B-326	BD	LONG BRANCH	FW	18	2	11	5.925	*	75	-0.01	18	0	0	0	I	74	0.101
B-157		CLARK CK															
B-159	INT	BULLOCK CK	FW	49	1	2	5.27	*	117	-0.011	49	4	8	73.5	*	117	0
0305010512																	
B-099-7		VAUGHN CK															
B-099A	BD	LAKE LANIER	FW	16	0	0	0	I	69	0.034	16	0	0	0	*	68	-0.13
B-099B	BD	LAKE LANIER	FW	17	1	6	9.94	*	68	0.022	17	0	0	0	*	69	-0.05
B-719		N PACOLET RVR															
B-301	BD	PAGE CK	FW	18	2	11	5.84	D	71	-0.015	17	2	12	195	*	70	-0.172
B-026	BD	N PACOLET RVR	FW	25	1	4	5.97	D	143	-0.011	24	0	0	0	D	142	-0.621
B-126	INT	N PACOLET RVR	FW	46	2	4	5.715	D	69	-0.057	45	7	16	118.286	D	68	-0.588
RS-03514	RS03	OBED CREEK	FW	12	0	0	0				12	1	8	110			
B-791		OBED CK															
0305010513																	
B-720		S PACOLET RVR															
B-103	BD	SPIVEY CK	FW	18	1	6	5.53	*	83	-0.002	17	1	6	650	D	82	-0.502
B-790		MOTLOW CK															
B-302	INT	S PACOLET RVR	FW	52	2	4	5.825	*	136	-0.008	51	3	6	85	D	135	-0.591
B-340	BD	LAKE BOWEN	FW	12	0	0	0				12	0	0	0			
B-339	INT	LAKE BOWEN	FW	45	0	0	0	D	51	-0.126	45	2	4	39.5	I	51	0.563
B-113	BD	LAKE, SPARTANBURG RESERVOIR #1	FW	18	1	6	5.99	*	69	0.013	17	0	0	0	D	68	-0.171

Broad River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (92-2004) TP	TRENDS (92-2004) N	TRENDS (92-2004) MAG	TRENDS (90-2004) TP	TRENDS (90-2004) N	TRENDS (90-2004) MAG
0305010511													
B-739		BULLOCK CK											
B-325	BD	CLARK FORK TO CRAWFORD LAKE	FW					*	47	0	*	58	0
B-737	BD	LAKE YORK	FW	10	0	0	0						
B-326	BD	LONG BRANCH	FW					*	47	0	*	58	0
B-157		CLARK CK											
B-159	INT	BULLOCK CK	FW					*	78	0	*	89	0
0305010512													
B-099-7		VAUGHN CK											
B-099A	BD	LAKE LANIER	FW	11	0	0	0	D	41	0	D	53	0
B-099B	BD	LAKE LANIER	FW	12	0	0	0	D	39	0	*	51	0
B-719		N PACOLET RVR											
B-301	BD	PAGE CK	FW					*	45	0	*	57	0
B-026	BD	N PACOLET RVR	FW					D	91	-0.009	D	113	-0.008
B-126	INT	N PACOLET RVR	FW					D	49	-0.008	D	49	-0.008
RS-03514	RS03	OBED CREEK	FW										
B-791		OBED CK											
0305010513													
B-720		S PACOLET RVR											
B-103	BD	SPIVEY CK	FW					*	51	0	*	63	0
B-790		MOTLOW CK											
B-302	INT	S PACOLET RVR	FW					D	75	0	D	105	-0.001
B-340	BD	LAKE BOWEN	FW	12	0	0	0						
B-339	INT	LAKE BOWEN	FW	34	0	0	0	I	34	0	I	34	0
B-113	BD	LAKE, SPARTANBURG RESERVOIR #1	FW	12	0	0	0	*	43	0	*	55	0

Broad River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (90-2004) TN	TRENDS (90-2004) N	TRENDS (90-2004) MAG	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (90-2004) TSS	TRENDS (90-2004) N	TRENDS (90-2004) MAG
0305010511																	
B-739		BULLOCK CK															
B-325	BD	CLARK FORK TO CRAWFORD LAKE	FW														
B-737	BD	LAKE YORK	FW	10	0	0	0				6	0	0	0			
B-326	BD	LONG BRANCH	FW														
B-157		CLARK CK															
B-159	INT	BULLOCK CK	FW					*	56	0.002							
0305010512																	
B-099-7		VAUGHN CK															
B-099A	BD	LAKE LANIER	FW	10	0	0	0				6	0	0	0			
B-099B	BD	LAKE LANIER	FW	11	0	0	0				6	0	0	0			
B-719		N PACOLET RVR															
B-301	BD	PAGE CK	FW														
B-026	BD	N PACOLET RVR	FW					D	132	-0.009							
B-126	INT	N PACOLET RVR	FW					*	51	0.009							
RS-03514	RS03	OBED CREEK	FW														
B-791		OBED CK															
0305010513																	
B-720		S PACOLET RVR															
B-103	BD	SPIVEY CK	FW					*	32	0.008					*	54	-0.129
B-790		MOTLOW CK															
B-302	INT	S PACOLET RVR	FW					*	71	0.004					*	101	-0.151
B-340	BD	LAKE BOWEN	FW	11	0	0	0				6	0	0	0			
B-339	INT	LAKE BOWEN	FW	29	1	3	1.52	I	35	0.046	22	0	0	0			
B-113	BD	LAKE, SPARTANBURG RESERVOIR #1	FW	10	0	0	0				5	0	0	0			

Broad River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	GEO MEAN	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (90-2004) BACT	TRENDS (90-2004) N	TRENDS (90-2004) MAG	NH3 N	NH3 EXC.	NH3 %
0305010511														
B-739		BULLOCK CK												
B-325	BD	CLARK FORK TO CRAWFORD LAKE	FW	171.123	18	5	28	1114	*	74	3.317	10	0	0
B-737	BD	LAKE YORK	FW	3.3537	10	0	0	0				10	0	0
B-326	BD	LONG BRANCH	FW	223.73	18	3	17	5750	I	74	8.311	10	0	0
B-157		CLARK CK												
B-159	INT	BULLOCK CK	FW	271.997	49	14	29	850.7143	*	117	-5.017	34	0	0
0305010512														
B-099-7		VAUGHN CK												
B-099A	BD	LAKE LANIER	FW	80.7863	16	0	0	0	I	68	6.626	10	0	0
B-099B	BD	LAKE LANIER	FW	10.4868	17	0	0	0	*	69	0.664	11	0	0
B-719		N PACOLET RVR		207.364	2	1	50	430						
B-301	BD	PAGE CK	FW	626.896	18	13	72	2148.462	*	70	22.104	10	0	0
B-026	BD	N PACOLET RVR	FW	378.403	37	17	46	1622.353	*	145	-5.834	22	0	0
B-126	INT	N PACOLET RVR	FW	250.577	56	13	23	3710.769	*	71	-12.738	30	0	0
RS-03514	RS03	OBED CREEK	FW	247.794	12	3	25	1966.667				8	0	0
B-791		OBED CK												
0305010513														
B-720		S PACOLET RVR												
B-103	BD	SPIVEY CK	FW	195.883	18	3	17	1633.333	*	83	0	10	0	0
B-790		MOTLOW CK												
B-302	INT	S PACOLET RVR	FW	292.963	52	13	25	1703.077	*	119	-3.754	30	0	0
B-340	BD	LAKE BOWEN	FW	8.4799	12	0	0	0				11	0	0
B-339	INT	LAKE BOWEN	FW	6.6295	46	0	0	0	I	52	2.022	29	0	0
B-113	BD	LAKE, SPARTANBURG RESERVOIR #1	FW	22.2111	18	0	0	0	*	69	-0.602	10	0	0

Broad River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.	CU N	CU EXC.	CU %	MEAN EXC.	PB N	PB EXC.	PB %	MEAN EXC.
0305010511																			
B-739		BULLOCK CK																	
B-325	BD	CLARK FORK TO CRAWFORD LAKE	FW	4	0	0	0	4	0	0	0	4	1	25	20	4	0	0	0
B-737	BD	LAKE YORK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-326	BD	LONG BRANCH	FW	4	0	0	0	4	0	0	0	4	1	25	11	4	0	0	0
B-157		CLARK CK																	
B-159	INT	BULLOCK CK	FW	17	0	0	0	17	0	0	0	17	1	6	17	17	0	0	0
0305010512																			
B-099-7		VAUGHN CK																	
B-099A	BD	LAKE LANIER	FW	3	1	33	34	3	0	0	0	3	1	33	25	3	0	0	0
B-099B	BD	LAKE LANIER	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-719		N PACOLET RVR																	
B-301	BD	PAGE CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-026	BD	N PACOLET RVR	FW	9	0	0	0	9	0	0	0	9	0	0	0	9	0	0	0
B-126	INT	N PACOLET RVR	FW	16	1	6	17	16	0	0	0	16	1	6	18	16	0	0	0
RS-03514	RS03	OBED CREEK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-791		OBED CK																	
0305010513																			
B-720		S PACOLET RVR																	
B-103	BD	SPIVEY CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-790		MOTLOW CK																	
B-302	INT	S PACOLET RVR	FW	16	0	0	0	16	0	0	0	16	0	0	0	16	0	0	0
B-340	BD	LAKE BOWEN	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-339	INT	LAKE BOWEN	FW	15	0	0	0	15	0	0	0	15	0	0	0	15	0	0	0
B-113	BD	LAKE, SPARTANBURG RESERVOIR #1	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0

Broad River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	HG N	HG EXC.	HG %	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
0305010511														
B-739		BULLOCK CK												
B-325	BD	CLARK FORK TO CRAWFORD LAKE	FW	4	0	0	4	0	0	0	4	0	0	0
B-737	BD	LAKE YORK	FW	4	0	0	4	0	0	0	4	0	0	0
B-326	BD	LONG BRANCH	FW	4	0	0	4	0	0	0	4	0	0	0
B-157		CLARK CK												
B-159	INT	BULLOCK CK	FW	17	0	0	17	0	0	0	17	0	0	0
0305010512														
B-099-7		VAUGHN CK												
B-099A	BD	LAKE LANIER	FW	3	0	0	3	1	33	31	3	0	0	0
B-099B	BD	LAKE LANIER	FW	4	0	0	4	0	0	0	4	0	0	0
B-719		N PACOLET RVR												
B-301	BD	PAGE CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-026	BD	N PACOLET RVR	FW	9	0	0	9	0	0	0	9	0	0	0
B-126	INT	N PACOLET RVR	FW	15	0	0	16	0	0	0	16	0	0	0
RS-03514	RS03	OBED CREEK	FW	4	0	0	4	0	0	0	4	0	0	0
B-791		OBED CK												
0305010513														
B-720		S PACOLET RVR												
B-103	BD	SPIVEY CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-790		MOTLOW CK												
B-302	INT	S PACOLET RVR	FW	15	0	0	16	1	6	36	15	0	0	0
B-340	BD	LAKE BOWEN	FW	4	0	0	4	0	0	0	4	0	0	0
B-339	INT	LAKE BOWEN	FW	15	0	0	15	0	0	0	15	0	0	0
B-113	BD	LAKE, SPARTANBURG RESERVOIR #1	FW	4	0	0	4	0	0	0	4	0	0	0

Broad River Basin

STATION				DO	DO	DO	MEAN	TRENDS (90-2004)					
NUMBER	TYPE	WATERBODY NAME	CLASS	N	EXC.	%	EXC.	DO	N	MAG	BOD	N	MAG
0305010515													
B-028	BD	PACOLET RVR	FW	19	0	0	0	*	80	-0.02	D	78	-0.056
RL-02323	RL02	LAKE BLALOCK	FW	12	1	8	3.4						
B-783		BUCK CK											
B-259	BD	LITTLE BUCK CK	FW	18	0	0	0	*	69	-0.013	*	67	-0.033
RL-01019	RL01	LAKE BLALOCK	FW	11	0	0	0						
RL-03345	RL03	LAKE BLALOCK	FW	12	0	0	0						
RL-04367	RL04	LAKE BLALOCK	FW	8	0	0	0						
RL-04389	RL04	LAKE BLALOCK	FW	8	0	0	0						
RL-04363	RL04	LAKE BLALOCK	FW	8	0	0	0						
RL-04461	RL04	LAKE BLALOCK	FW	12	0	0	0						
B-347	BD	LAKE BLALOCK	FW	8	0	0	0						
B-163A	BD	PACOLET RVR	FW	17	0	0	0	I	83	0.053	D	81	-0.067
B-191	BD	POTTER BRANCH	FW	18	2	11	4.885	*	72	0	D	68	-0.066
B-331	INT	PACOLET RVR	FW	46	0	0	0	I	70	0.079	*	65	0.071
BP-001	BD	PACOLET RVR	FW	18	1	6	4.35	*	72	0	*	72	0
B-048	INT	PACOLET RVR	FW	57	1	2	4.32	D	173	-0.05	*	169	0.013
0305010514													
B-221	BD	LAWSONS FORK CK	FW	18	0	0	0	*	69	0.017	D	67	-0.08
B-277	BD	LAWSONS FORK CK	FW	16	0	0	0	I	68	0.042	D	66	-0.057
B-278	BD	LAWSONS FORK CK	FW	17	0	0	0	*	69	0	*	68	-0.1
RS-02320	RS02	MEADOW SWAMP	FW	12	0	0	0						
B-531		MEADOW CK											
BL-005	BD	LAWSONS FORK CK	FW	17	0	0	0	*	83	-0.009	*	81	-0.025
BL-001	INT	LAWSONS FORK CK	FW	58	0	0	0	*	178	0.014	*	170	0
0305010603													
RL-01010	RL01	LAKE LONG	FW	11	0	0	0						
B-344	BD	LAKE LONG	FW	11	1	9	4.95						
B-243	BD	MENG CK TRIB	FW	18	0	0	0	I	73	0.113	D	73	-0.156
B-064	BD	MENG CK	FW	18	1	6	2.27	*	74	-0.017	I	72	0.06
B-155	INT	BROWNS CK	FW	47	1	2	1.27	*	72	-0.046	I	70	0.144
B-335	BD	GREGORYS CK	FW	11	1	9	2.78	*	36	0	I	36	0.144
RS-04543	RS04	CLARKS CK	FW	12	0	0	0						
B-778		NEALS CK											
B-046	INT	BROAD RVR	FW	60	2	3	4.865	D	176	-0.05	*	171	0.029
0305010601													
B-086	BD	ROSS BRANCH	FW	18	0	0	0	*	73	0	*	73	0.042
RS-03349	RS03	SUSYBOLE CREEK	FW	11	0	0	0						
B-136	INT	TURKEY CK	FW	42	0	0	0	*	67	-0.065	I	66	0.15

Broad River Basin

STATION				pH	pH	pH	MEAN	TRENDS (90-2004)			TURB	TURB	TURB	MEAN	TRENDS (90-2004)		
NUMBER	TYPE	WATERBODY NAME	CLASS	N	EXC.	%	EXC.	PH	N	MAG	N	EXC.	%	EXC.	TURB	N	MAG
0305010515																	
B-028	BD	PACOLET RVR	FW	19	2	11	5.685	*	80	-0.003	19	2	11	55.5	D	81	-0.873
RL-02323	RL02	LAKE BLALOCK	FW	12	1	8	5.97				12	1	8	28			
B-783		BUCK CK															
B-259	BD	LITTLE BUCK CK	FW	18	2	11	5.42	*	69	0	18	2	11	125	D	69	-0.225
RL-01019	RL01	LAKE BLALOCK	FW	11	1	9	8.69				10	0	0	0			
RL-03345	RL03	LAKE BLALOCK	FW	12	0	0	0				12	3	25	155			
RL-04367	RL04	LAKE BLALOCK	FW	8	1	13	8.66				8	0	0	0			
RL-04389	RL04	LAKE BLALOCK	FW	8	1	13	8.59				8	0	0	0			
RL-04363	RL04	LAKE BLALOCK	FW	8	0	0	0				8	0	0	0			
RL-04461	RL04	LAKE BLALOCK	FW	12	0	0	0				12	1	8	70			
B-347	BD	LAKE BLALOCK	FW	8	0	0	0				8	0	0	0			
B-163A	BD	PACOLET RVR	FW	17	0	0	0	I	84	0.017	17	0	0	0	D	83	-0.262
B-191	BD	POTTER BRANCH	FW	18	4	22	5.8775	*	72	-0.008	18	0	0	0	*	71	-0.102
B-331	INT	PACOLET RVR	FW	46	0	0	0	*	70	-0.004	46	3	7	70	*	70	0.25
BP-001	BD	PACOLET RVR	FW	18	0	0	0	*	72	0.011	18	0	0	0	D	70	-0.395
B-048	INT	PACOLET RVR	FW	57	0	0	0	*	173	0	57	7	12	161	*	173	0
0305010514																	
B-221	BD	LAWSONS FORK CK	FW	18	0	0	0	D	69	-0.02	18	0	0	0	D	69	-0.504
B-277	BD	LAWSONS FORK CK	FW	16	0	0	0	*	68	-0.008	16	0	0	0	*	68	-0.199
B-278	BD	LAWSONS FORK CK	FW	17	0	0	0	*	69	0	17	1	6	55	*	69	-0.167
RS-02320	RS02	MEADOW SWAMP	FW	12	0	0	0				12	1	8	60			
B-531		MEADOW CK															
BL-005	BD	LAWSONS FORK CK	FW	17	2	12	5.865	*	83	0	17	0	0	0	D	82	-0.402
BL-001	INT	LAWSONS FORK CK	FW	58	3	5	5.64	*	177	0.005	58	7	12	100.714	D	176	-0.462
0305010603																	
RL-01010	RL01	LAKE LONG	FW	12	0	0	0				12	0	0	0			
B-344	BD	LAKE LONG	FW	11	3	27	8.8067				11	0	0	0			
B-243	BD	MENG CK TRIB	FW	18	2	11	5.8	*	74	0	18	0	0	0	*	74	0
B-064	BD	MENG CK	FW	18	2	11	5.5	*	74	-0.015	18	1	6	60	*	74	0
B-155	INT	BROWNS CK	FW	46	1	2	5.5	*	71	0	47	4	9	246.25	*	72	0.33
B-335	BD	GREGORYS CK	FW	11	1	9	5.8	*	36	0	12	0	0	0	*	37	0
RS-04543	RS04	CLARKS CK	FW	12	1	8	5.1				12	1	8	210			
B-778		NEALS CK															
B-046	INT	BROAD RVR	FW	60	2	3	5.545	D	175	-0.033	60	11	18	134.818	*	175	0
0305010601																	
B-086	BD	ROSS BRANCH	FW	18	0	0	0	*	73	-0.012	18	5	28	257.4	*	72	0.197
RS-03349	RS03	SUSYBOLE CREEK	FW	11	0	0	0				11	0	0	0			
B-136	INT	TURKEY CK	FW	42	0	0	0	*	67	0.018	43	9	21	93.3333	*	68	0.55

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STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (92-2004) TP	TRENDS (92-2004) N	TRENDS (92-2004) MAG	TRENDS (90-2004) TP	TRENDS (90-2004) N	TRENDS (90-2004) MAG
0305010515													
B-028	BD	PACOLET RVR	FW					D	50	-0.006	D	62	-0.008
RL-02323	RL02	LAKE BLALOCK	FW	12	2	17	0.07						
B-783		BUCK CK											
B-259	BD	LITTLE BUCK CK	FW					*	44	0	*	56	0
RL-01019	RL01	LAKE BLALOCK	FW										
RL-03345	RL03	LAKE BLALOCK	FW	11	1	9	0.21						
RL-04367	RL04	LAKE BLALOCK	FW	8	0	0	0						
RL-04389	RL04	LAKE BLALOCK	FW	8	0	0	0						
RL-04363	RL04	LAKE BLALOCK	FW	8	0	0	0						
RL-04461	RL04	LAKE BLALOCK	FW	12	1	8	0.07						
B-347	BD	LAKE BLALOCK	FW	8	0	0	0						
B-163A	BD	PACOLET RVR	FW					I	55	0.002	*	67	0
B-191	BD	POTTER BRANCH	FW					D	48	-0.009	D	60	-0.024
B-331	INT	PACOLET RVR	FW					D	50	-0.003	D	50	-0.003
BP-001	BD	PACOLET RVR	FW					*	47	0.001	*	59	0
B-048	INT	PACOLET RVR	FW					*	113	0	*	136	0
0305010514													
B-221	BD	LAWSONS FORK CK	FW					*	45	0.005	*	57	-0.001
B-277	BD	LAWSONS FORK CK	FW					*	43	0.002	*	55	-0.001
B-278	BD	LAWSONS FORK CK	FW					*	44	0.063	I	55	0.084
RS-02320	RS02	MEADOW SWAMP	FW										
B-531		MEADOW CK											
BL-005	BD	LAWSONS FORK CK	FW					*	55	-0.001	*	67	0.001
BL-001	INT	LAWSONS FORK CK	FW					*	116	0.002	*	135	0
0305010603													
RL-01010	RL01	LAKE LONG	FW										
B-344	BD	LAKE LONG	FW	11	1	9	0.53						
B-243	BD	MENG CK TRIB	FW					D	50	-0.005	D	61	-0.01
B-064	BD	MENG CK	FW					D	50	-0.01	D	62	-0.011
B-155	INT	BROWNS CK	FW					*	49	0	*	49	0
B-335	BD	GREGORYS CK	FW										
RS-04543	RS04	CLARKS CK	FW										
B-778		NEALS CK											
B-046	INT	BROAD RVR	FW					*	110	-0.001	D	133	-0.001
0305010601													
B-086	BD	ROSS BRANCH	FW					*	49	0.003	*	61	0.002
RS-03349	RS03	SUSYBOLE CREEK	FW										
B-136	INT	TURKEY CK	FW					*	46	0	*	46	0

Broad River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (90-2004) TN	TRENDS (90-2004) N	TRENDS (90-2004) MAG	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (90-2004) TSS	TRENDS (90-2004) N	TRENDS (90-2004) MAG
0305010515																	
B-028	BD	PACOLET RVR	FW					*	32	0.008					D	52	-1.227
RL-02323	RL02	LAKE BLALOCK	FW	7	0	0	0				6	1	17	140			
B-783		BUCK CK															
B-259	BD	LITTLE BUCK CK	FW														
RL-01019	RL01	LAKE BLALOCK	FW	7	0	0	0				6	0	0	0			
RL-03345	RL03	LAKE BLALOCK	FW	6	0	0	0				6	0	0	0			
RL-04367	RL04	LAKE BLALOCK	FW	7	0	0	0				4	0	0	0			
RL-04389	RL04	LAKE BLALOCK	FW	7	0	0	0				4	0	0	0			
RL-04363	RL04	LAKE BLALOCK	FW	7	0	0	0				4	0	0	0			
RL-04461	RL04	LAKE BLALOCK	FW	11	0	0	0				6	0	0	0			
B-347	BD	LAKE BLALOCK	FW	7	0	0	0				4	0	0	0			
B-163A	BD	PACOLET RVR	FW					*	33	0.006							
B-191	BD	POTTER BRANCH	FW														
B-331	INT	PACOLET RVR	FW					*	55	0.008							
BP-001	BD	PACOLET RVR	FW														
B-048	INT	PACOLET RVR	FW					I	150	0.011							
0305010514																	
B-221	BD	LAWSONS FORK CK	FW														
B-277	BD	LAWSONS FORK CK	FW														
B-278	BD	LAWSONS FORK CK	FW														
RS-02320	RS02	MEADOW SWAMP	FW														
B-531		MEADOW CK															
BL-005	BD	LAWSONS FORK CK	FW					*	34	-0.019							
BL-001	INT	LAWSONS FORK CK	FW					I	153	0.054					I	156	0.176
0305010603																	
RL-01010	RL01	LAKE LONG	FW	7	1	14	2.03				6	1	17	66			
B-344	BD	LAKE LONG	FW	10	0	0	0				4	0	0	0			
B-243	BD	MENG CK TRIB	FW														
B-064	BD	MENG CK	FW														
B-155	INT	BROWNS CK	FW					*	51	0.02							
B-335	BD	GREGORYS CK	FW					I	31	0.019							
RS-04543	RS04	CLARKS CK	FW														
B-778		NEALS CK															
B-046	INT	BROAD RVR	FW					*	148	0.008					*	113	0.166
0305010601																	
B-086	BD	ROSS BRANCH	FW														
RS-03349	RS03	SUSYBOLE CREEK	FW														
B-136	INT	TURKEY CK	FW					*	50	0.018							

Broad River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	GEO MEAN	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (90-2004) BACT	TRENDS (90-2004) N	TRENDS (90-2004) MAG	NH3 N	NH3 EXC.	NH3 %
0305010515														
B-028	BD	PACOLET RVR	FW	144.785	18	2	11	990	D	81	-14.009	11	0	0
RL-02323	RL02	LAKE BLALOCK	FW	63.8902	12	0	0	0				7	0	0
B-783		BUCK CK												
B-259	BD	LITTLE BUCK CK	FW	572.379	18	12	67	1532.5	*	69	7.641	10	0	0
RL-01019	RL01	LAKE BLALOCK	FW	5.8752	11	0	0	0				7	0	0
RL-03345	RL03	LAKE BLALOCK	FW	50.8953	12	3	25	1946.667				6	0	0
RL-04367	RL04	LAKE BLALOCK	FW	2.9072	8	0	0	0				7	0	0
RL-04389	RL04	LAKE BLALOCK	FW	3.7473	8	0	0	0				7	0	0
RL-04363	RL04	LAKE BLALOCK	FW	2.9516	8	0	0	0				7	0	0
RL-04461	RL04	LAKE BLALOCK	FW	12.6617	12	0	0	0				11	0	0
B-347	BD	LAKE BLALOCK	FW	2.8473	8	0	0	0				7	0	0
B-163A	BD	PACOLET RVR	FW	49.4641	17	0	0	0	*	84	-1.967	9	0	0
B-191	BD	POTTER BRANCH	FW	118.7	18	3	17	900	*	71	-11.232	10	0	0
B-331	INT	PACOLET RVR	FW	74.4607	45	2	4	500	*	69	0	31	0	0
BP-001	BD	PACOLET RVR	FW	118.249	18	4	22	765	D	72	-10.911	11	0	0
B-048	INT	PACOLET RVR	FW	180.768	56	10	18	2012	D	172	-16.828	40	0	0
0305010514														
B-221	BD	LAWSONS FORK CK	FW	803.608	18	12	67	2030	*	69	-114.82	10	0	0
B-277	BD	LAWSONS FORK CK	FW	721.241	16	11	69	1532.727	*	68	-34.5	9	0	0
B-278	BD	LAWSONS FORK CK	FW	851.785	17	13	76	1824.615	D	69	-106.17	10	0	0
RS-02320	RS02	MEADOW SWAMP	FW	451.288	12	4	33	2597.5				7	0	0
B-531		MEADOW CK												
BL-005	BD	LAWSONS FORK CK	FW	244.045	17	4	24	755	D	83	-67.013	10	0	0
BL-001	INT	LAWSONS FORK CK	FW	293.599	57	22	39	1360.455	*	175	-2.496	43	0	0
0305010603														
RL-01010	RL01	LAKE LONG	FW	3.2883	11	0	0	0				7	0	0
B-344	BD	LAKE LONG	FW	1.2535	11	0	0	0				10	0	0
B-243	BD	MENG CK TRIB	FW	427.308	18	10	56	946	D	74	-48.122	9	0	0
B-064	BD	MENG CK	FW	299.408	18	7	39	587.1429	*	74	-14.276	9	0	0
B-155	INT	BROWNS CK	FW	210.021	47	9	19	1788.889	*	72	-4.257	28	0	0
B-335	BD	GREGORYS CK	FW	122.533	12	1	8	450	*	37	-1.106	10	0	0
RS-04543	RS04	CLARKS CK	FW	226.124	12	4	33	470				9	0	0
B-778		NEALS CK												
B-046	INT	BROAD RVR	FW	187.972	60	13	22	1438.462	*	176	2.813	41	0	0
0305010601														
B-086	BD	ROSS BRANCH	FW	2492.93	18	18	100	4742.778	*	73	0	10	0	0
RS-03349	RS03	SUSYBOLE CREEK	FW	152.346	11	0	0	0				5	0	0
B-136	INT	TURKEY CK	FW	222.677	43	11	26	1239.091	*	68	0	25	0	0

Broad River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.	CU N	CU EXC.	CU %	MEAN EXC.	PB N	PB EXC.	PB %	MEAN EXC.
0305010515																			
B-028	BD	PACOLET RVR	FW	5	0	0	0	5	0	0	0	5	0	0	0	4	0	0	0
RL-02323	RL02	LAKE BLALOCK	FW	4	1	25	18	4	0	0	0	4	1	25	20	4	0	0	0
B-783		BUCK CK																	
B-259	BD	LITTLE BUCK CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
RL-01019	RL01	LAKE BLALOCK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
RL-03345	RL03	LAKE BLALOCK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
RL-04367	RL04	LAKE BLALOCK	FW	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
RL-04389	RL04	LAKE BLALOCK	FW	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
RL-04363	RL04	LAKE BLALOCK	FW	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
RL-04461	RL04	LAKE BLALOCK	FW	4	0	0	0	4	1	25	59	4	2	50	62	4	0	0	0
B-347	BD	LAKE BLALOCK	FW	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
B-163A	BD	PACOLET RVR	FW	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
B-191	BD	POTTER BRANCH	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-331	INT	PACOLET RVR	FW	16	0	0	0	16	0	0	0	16	1	6	1600	16	0	0	0
BP-001	BD	PACOLET RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-048	INT	PACOLET RVR	FW	20	0	0	0	20	0	0	0	20	1	5	14	20	0	0	0
0305010514																			
B-221	BD	LAWSONS FORK CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-277	BD	LAWSONS FORK CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-278	BD	LAWSONS FORK CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
RS-02320	RS02	MEADOW SWAMP	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-531		MEADOW CK																	
BL-005	BD	LAWSONS FORK CK	FW	4	1	25	63	4	1	25	62	4	0	0	0	4	1	25	61
BL-001	INT	LAWSONS FORK CK	FW	20	0	0	0	20	0	0	0	20	0	0	0	20	0	0	0
0305010603																			
RL-01010	RL01	LAKE LONG	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-344	BD	LAKE LONG	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-243	BD	MENG CK TRIB	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-064	BD	MENG CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-155	INT	BROWNS CK	FW	16	0	0	0	16	0	0	0	16	1	6	32	16	0	0	0
B-335	BD	GREGORYS CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
RS-04543	RS04	CLARKS CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-778		NEALS CK																	
B-046	INT	BROAD RVR	FW	20	0	0	0	20	0	0	0	20	2	10	24	20	0	0	0
0305010601																			
B-086	BD	ROSS BRANCH	FW	6	0	0	0	6	0	0	0	6	0	0	0	6	0	0	0
RS-03349	RS03	SUSYBOLE CREEK	FW	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	0
B-136	INT	TURKEY CK	FW	13	0	0	0	13	0	0	0	13	1	8	110	13	0	0	0

Broad River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	HG N	HG EXC.	HG %	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
0305010515														
B-028	BD	PACOLET RVR	FW	4	0	0	4	0	0	0	4	0	0	0
RL-02323	RL02	LAKE BLALOCK	FW	4	0	0	4	0	0	0	4	0	0	0
B-783		BUCK CK												
B-259	BD	LITTLE BUCK CK	FW	4	0	0	4	0	0	0	4	0	0	0
RL-01019	RL01	LAKE BLALOCK	FW	4	0	0	4	0	0	0	4	0	0	0
RL-03345	RL03	LAKE BLALOCK	FW	4	0	0	4	0	0	0	4	0	0	0
RL-04367	RL04	LAKE BLALOCK	FW	3	0	0	3	0	0	0	3	0	0	0
RL-04389	RL04	LAKE BLALOCK	FW	3	0	0	3	0	0	0	3	0	0	0
RL-04363	RL04	LAKE BLALOCK	FW	3	0	0	3	0	0	0	3	0	0	0
RL-04461	RL04	LAKE BLALOCK	FW	4	0	0	4	1	25	35	4	0	0	0
B-347	BD	LAKE BLALOCK	FW	3	0	0	3	0	0	0	3	0	0	0
B-163A	BD	PACOLET RVR	FW	3	0	0	3	0	0	0	3	0	0	0
B-191	BD	POTTER BRANCH	FW	4	0	0	4	0	0	0	4	0	0	0
B-331	INT	PACOLET RVR	FW	15	0	0	16	0	0	0	16	0	0	0
BP-001	BD	PACOLET RVR	FW	4	0	0	4	0	0	0	4	0	0	0
B-048	INT	PACOLET RVR	FW	20	0	0	20	0	0	0	20	0	0	0
0305010514														
B-221	BD	LAWSONS FORK CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-277	BD	LAWSONS FORK CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-278	BD	LAWSONS FORK CK	FW	4	0	0	4	0	0	0	4	0	0	0
RS-02320	RS02	MEADOW SWAMP	FW	4	0	0	4	0	0	0	4	0	0	0
B-531		MEADOW CK												
BL-005	BD	LAWSONS FORK CK	FW	4	0	0	4	1	25	62	4	0	0	0
BL-001	INT	LAWSONS FORK CK	FW	19	0	0	20	0	0	0	20	0	0	0
0305010603														
RL-01010	RL01	LAKE LONG	FW	4	0	0	4	0	0	0	4	0	0	0
B-344	BD	LAKE LONG	FW	4	0	0	4	0	0	0	4	0	0	0
B-243	BD	MENG CK TRIB	FW	4	0	0	4	0	0	0	4	0	0	0
B-064	BD	MENG CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-155	INT	BROWNS CK	FW	16	0	0	16	0	0	0	16	0	0	0
B-335	BD	GREGORYS CK	FW	4	0	0	4	0	0	0	4	0	0	0
RS-04543	RS04	CLARKS CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-778		NEALS CK												
B-046	INT	BROAD RVR	FW	19	0	0	20	0	0	0	20	0	0	0
0305010601														
B-086	BD	ROSS BRANCH	FW	6	0	0	6	0	0	0	6	0	0	0
RS-03349	RS03	SUSYBOLE CREEK	FW	3	0	0	3	0	0	0	3	0	0	0
B-136	INT	TURKEY CK	FW	13	0	0	13	0	0	0	13	0	0	0

Broad River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	DO N	DO EXC.	DO %	MEAN EXC.	TRENDS (90-2004) DO	N	MAG	BOD	N	MAG
0305010602													
B-074	BD	DRY FORK	FW	18	2	11	4.35	D	74	-0.066	I	73	0.11
CL-023	BD	LAKE, CHESTER STATE PARK LAKE	FW	10	0	0	0						
B-075	INT	SANDY RVR	FW	54	2	4	4.45	D	123	-0.073	I	119	0.05
0305010604													
RS-04527	RS04	MCCLURES CK	FW	12	0	0	0						
B-143													
B-047	BD	BROAD RVR	FW	18	0	0	0	I	82	0.033	*	77	0
B-151		HELLERS CK											
B-346	BD	LAKE, PARR RESERVOIR	FW	12	0	0	0						
B-831													
B-751		CANNONS CK											
B-328	BD	LAKE, MONTICELLO	FW	23	0	0	0	*	150	-0.016	D	134	-0.085
RL-04370	RL04	LAKE, MONTICELLO	FW	12	0	0	0						
B-327	INT	LAKE, MONTICELLO	FW	57	0	0	0	*	190	0	*	169	-0.003
RL-04374	RL04	LAKE, MONTICELLO	FW	12	0	0	0						
RS-03343	RS03	MUD CREEK	FW	12	0	0	0						
B-345	INT	LAKE, PARR RESERVOIR	FW	46	1	2	4.95	*	52	0.116	I	53	0.466
0305010607													
B-236	BD	BROAD RVR	FW	24	0	0	0	*	142	0.018	*	137	0.014
RS-03517	RS03	CRIMS CREEK TRIB	FW	12	0	0	0						
B-800		CRIMS CK											
B-801		WATEREE CK											
B-110	BD	LAKE, ELIZABETH	FW	18	0	0	0	I	71	0.033	*	69	-0.02
B-316	BD	CRANE CK	FW	24	2	8	3.655	*	126	-0.022	*	122	-0.001
B-280	BD	SMITH BRANCH	FW	22	0	0	0	I	141	0.05	*	132	-0.001
B-337	INT	BROAD RVR	FW	44	0	0	0	*	68	0.053	*	69	0
0305010605													
B-123	BD	WINNSBORO BRANCH	FW	17	0	0	0	*	69	0.043	*	68	-0.036
B-077	BD	WINNSBORO BRANCH	FW	17	0	0	0	*	70	0	D	66	-0.075
B-102	INT	JACKSON CK	FW	45	0	0	0	I	69	0.063	*	69	0.044
B-338	INT	MILL CK	FW	44	3	7	4.1233	*	68	0.076	I	68	0.078
B-145	BD	LITTLE RVR	FW	18	0	0	0	*	83	0.015	*	80	0.011
B-350	INT	LITTLE RVR	FW	46	0	0	0	*	46	0.166	I	48	0.661
0305010606													
B-320/ RS-02453	INT	BIG CEDAR CK	FW	52	0	0	0	I	76	0.112	I	70	0.023

Broad River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	pH N	pH EXC.	pH %	MEAN EXC.	TRENDS (90-2004) PH	TRENDS (90-2004) N	TRENDS (90-2004) MAG	TURB N	TURB EXC.	TURB %	MEAN EXC.	TRENDS (90-2004) TURB	TRENDS (90-2004) N	TRENDS (90-2004) MAG
0305010602																	
B-074	BD	DRY FORK	FW	18	1	6	5.5	*	74	-0.029	18	1	6	90	*	74	0.261
CL-023	BD	LAKE, CHESTER STATE PARK LAKE	FW	10	0	0	0				10	2	20	36.5			
B-075	INT	SANDY RVR	FW	54	2	4	5.53	D	123	-0.025	54	10	19	211	*	123	0.12
0305010604																	
RS-04527	RS04	MCCLURES CK	FW	12	0	0	0				12	0	0	0			
B-143																	
B-047	BD	BROAD RVR	FW	18	1	6	8.7	I	82	0.031	18	4	22	58	*	78	0.638
B-151		HELLERS CK															
B-346	BD	LAKE, PARR RESERVOIR	FW	12	0	0	0				12	2	17	73.5			
B-831																	
B-751		CANNONS CK															
B-328	BD	LAKE, MONTICELLO	FW	24	1	4	8.56	I	151	0.027	23	0	0	0	D	135	-0.114
RL-04370	RL04	LAKE, MONTICELLO	FW	12	3	25	9.03				12	0	0	0			
B-327	INT	LAKE, MONTICELLO	FW	58	10	17	8.808	I	191	0.042	59	0	0	0	*	171	0
RL-04374	RL04	LAKE, MONTICELLO	FW	12	3	25	8.6633				12	0	0	0			
RS-03343	RS03	MUD CREEK	FW	12	0	0	0				12	0	0	0			
B-345	INT	LAKE, PARR RESERVOIR	FW	46	1	2	5.76	*	52	-0.03	48	5	10	43.8	*	54	-0.271
0305010607																	
B-236	BD	BROAD RVR	FW	24	0	0	0	I	142	0.044	24	1	4	55	*	136	-0.2
RS-03517	RS03	CRIMS CREEK TRIB	FW	12	0	0	0				12	1	8	67			
B-800		CRIMS CK															
B-801		WATEREE CK															
B-110	BD	LAKE, ELIZABETH	FW	18	0	0	0	I	71	0.043	18	1	6	30	*	69	-0.142
B-316	BD	CRANE CK	FW	24	1	4	5.45	I	126	0.032	24	1	4	74	D	124	-0.445
B-280	BD	SMITH BRANCH	FW	22	0	0	0	I	141	0.029	24	1	4	120	D	136	-0.133
B-337	INT	BROAD RVR	FW	44	2	5	8.6	*	68	0.028	47	2	4	68	*	71	-0.127
0305010605																	
B-123	BD	WINNSBORO BRANCH	FW	17	0	0	0	I	69	0.033	17	0	0	0	*	68	-0.016
B-077	BD	WINNSBORO BRANCH	FW	17	0	0	0	*	70	0.003	17	1	6	98	*	66	0.16
B-102	INT	JACKSON CK	FW	45	3	7	7.77	I	69	0.048	48	9	19	77.3333	*	70	0.066
B-338	INT	MILL CK	FW	43	1	2	8.73	*	67	0.04	47	4	9	103	*	69	0.21
B-145	BD	LITTLE RVR	FW	18	1	6	8.53	I	83	0.032	18	1	6	98	*	81	-0.336
B-350	INT	LITTLE RVR	FW	45	3	7	6.59	I	45	0.099	48	10	21	89.8	I	48	1.65
0305010606																	
B-320/ RS-02453	INT	BIG CEDAR CK	FW	52	1	2	5.99	*	76	0.041	48	1	2	93	*	69	-0.1

Broad River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (92-2004) TP	TRENDS (92-2004) N	TRENDS (92-2004) MAG	TRENDS (90-2004) TP	TRENDS (90-2004) N	TRENDS (90-2004) MAG
0305010602													
B-074	BD	DRY FORK	FW					*	50	-0.001	*	62	0
CL-023	BD	LAKE, CHESTER STATE PARK LAKE	FW	10	1	10	0.08						
B-075	INT	SANDY RVR	FW					*	77	0.001	*	88	-0.001
0305010604													
RS-04527	RS04	MCCLURES CK	FW										
B-143													
B-047	BD	BROAD RVR	FW					*	51	-0.002	D	63	-0.003
B-151		HELLERS CK											
B-346	BD	LAKE, PARR RESERVOIR	FW	12	4	33	0.0975						
B-831													
B-751		CANNONS CK											
B-328	BD	LAKE, MONTICELLO	FW	12	0	0	0	D	92	0	D	114	0
RL-04370	RL04	LAKE, MONTICELLO	FW	12	0	0	0						
B-327	INT	LAKE, MONTICELLO	FW	36	0	0	0	*	115	0	D	138	0
RL-04374	RL04	LAKE, MONTICELLO	FW	12	0	0	0						
RS-03343	RS03	MUD CREEK	FW										
B-345	INT	LAKE, PARR RESERVOIR	FW	36	1	3	0.06						
0305010607													
B-236	BD	BROAD RVR	FW					*	93	0	*	116	0
RS-03517	RS03	CRIMS CREEK TRIB	FW										
B-800		CRIMS CK											
B-801		WATEREE CK											
B-110	BD	LAKE, ELIZABETH	FW	12	0	0	0	*	45	0	D	57	-0.001
B-316	BD	CRANE CK	FW					*	89	-0.001	D	101	-0.003
B-280	BD	SMITH BRANCH	FW					I	89	0.005	I	113	0.002
B-337	INT	BROAD RVR	FW					*	49	0	*	49	0
0305010605													
B-123	BD	WINNSBORO BRANCH	FW					*	46	0	D	58	-0.01
B-077	BD	WINNSBORO BRANCH	FW					I	43	0.102	*	55	0.015
B-102	INT	JACKSON CK	FW					*	48	-0.002	*	48	-0.002
B-338	INT	MILL CK	FW					D	47	-0.001	D	47	-0.001
B-145	BD	LITTLE RVR	FW					*	53	0	*	65	0
B-350	INT	LITTLE RVR	FW					*	36	0	*	36	0
0305010606													
B-320/ RS-02453	INT	BIG CEDAR CK	FW					*	48	0	*	48	0

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STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (90-2004) TN	TRENDS (90-2004) N	TRENDS (90-2004) MAG	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (90-2004) TSS	TRENDS (90-2004) N	TRENDS (90-2004) MAG
0305010602																	
B-074	BD	DRY FORK	FW														
CL-023	BD	LAKE, CHESTER STATE PARK LAKE	FW	10	0	0	0				5	1	20	52.13			
B-075	INT	SANDY RVR	FW					I	59	0.039							
0305010604																	
RS-04527	RS04	MCCLURES CK	FW														
B-143																	
B-047	BD	BROAD RVR	FW												*	55	0.1
B-151		HELLERS CK															
B-346	BD	LAKE, PARR RESERVOIR	FW	11	0	0	0				6	0	0	0			
B-831																	
B-751		CANNONS CK															
B-328	BD	LAKE, MONTICELLO	FW	22	0	0	0	D	136	-0.024	11	0	0	0			
RL-04370	RL04	LAKE, MONTICELLO	FW	11	0	0	0				5	0	0	0			
B-327	INT	LAKE, MONTICELLO	FW	42	0	0	0	*	155	-0.001	29	0	0	0			
RL-04374	RL04	LAKE, MONTICELLO	FW	11	0	0	0				5	0	0	0			
RS-03343	RS03	MUD CREEK	FW														
B-345	INT	LAKE, PARR RESERVOIR	FW	31	0	0	0	*	37	0.03	22	0	0	0			
0305010607																	
B-236	BD	BROAD RVR	FW					*	139	-0.003					*	132	-0.165
RS-03517	RS03	CRIMS CREEK TRIB	FW														
B-800		CRIMS CK															
B-801		WATEREE CK															
B-110	BD	LAKE, ELIZABETH	FW	11	0	0	0				6	0	0	0			
B-316	BD	CRANE CK	FW					*	105	-0.008							
B-280	BD	SMITH BRANCH	FW					*	132	-0.002							
B-337	INT	BROAD RVR	FW					*	50	0.004							
0305010605																	
B-123	BD	WINNSBORO BRANCH	FW														
B-077	BD	WINNSBORO BRANCH	FW														
B-102	INT	JACKSON CK	FW					*	51	-0.008							
B-338	INT	MILL CK	FW					*	49	0.019							
B-145	BD	LITTLE RVR	FW														
B-350	INT	LITTLE RVR	FW					I	30	0.144							
0305010606																	
B-320/ RS-02453	INT	BIG CEDAR CK	FW					I	52	0.021							

Broad River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	GEO MEAN	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (90-2004) BACT	TRENDS (90-2004) N	TRENDS (90-2004) MAG	NH3 N	NH3 EXC.	NH3 %
0305010602														
B-074	BD	DRY FORK	FW	803.099	18	14	78	1642.857	*	73	-16.879	9	0	0
CL-023	BD	LAKE, CHESTER STATE PARK LAKE	FW	4.5115	10	0	0	0				10	0	0
B-075	INT	SANDY RVR	FW	342.377	54	17	31	2052.941	*	123	-10.065	35	0	0
0305010604														
RS-04527	RS04	MCCLURES CK	FW	422.872	12	6	50	878.3333				10	0	0
B-143														
B-047	BD	BROAD RVR	FW	71.5752	18	0	0	0	*	79	-0.992	10	0	0
B-151		HELLERS CK												
B-346	BD	LAKE, PARR RESERVOIR	FW	30.4563	12	0	0	0				11	0	0
B-831														
B-751		CANNONS CK												
B-328	BD	LAKE, MONTICELLO	FW	1.4357	23	0	0	0	D	137	0	21	0	0
RL-04370	RL04	LAKE, MONTICELLO	FW	1.5651	12	0	0	0				11	0	0
B-327	INT	LAKE, MONTICELLO	FW	2.0941	59	0	0	0	D	174	0	42	0	0
RL-04374	RL04	LAKE, MONTICELLO	FW	2.8096	12	0	0	0				11	0	0
RS-03343	RS03	MUD CREEK	FW	880.979	12	10	83	1407				6	0	0
B-345	INT	LAKE, PARR RESERVOIR	FW	15.9059	48	2	4	620	*	54	0.599	31	0	0
0305010607														
B-236	BD	BROAD RVR	FW	14.7699	24	2	8	1045	D	140	-1.119	21	0	0
RS-03517	RS03	CRIMS CREEK TRIB	FW	495.887	12	8	67	1472.5				6	0	0
B-800		CRIMS CK												
B-801		WATEREE CK												
B-110	BD	LAKE, ELIZABETH	FW	61.6912	18	2	11	1060	*	70	-4.041	11	0	0
B-316	BD	CRANE CK	FW	157.288	24	5	21	3218	D	123	-32.079	22	0	0
B-280	BD	SMITH BRANCH	FW	1188.03	24	19	79	3471.579	D	138	-132.101	21	0	0
B-337	INT	BROAD RVR	FW	54.0121	47	7	15	912.8571	*	71	0	27	0	0
0305010605														
B-123	BD	WINNSBORO BRANCH	FW	2338.54	17	14	82	11150	*	70	14.201	9	0	0
B-077	BD	WINNSBORO BRANCH	FW	1024.94	17	14	82	3932.143	*	68	-12.99	9	0	0
B-102	INT	JACKSON CK	FW	283.416	48	12	25	1232.5	*	71	-2.504	29	0	0
B-338	INT	MILL CK	FW	411.372	47	24	51	1357.083	*	69	5.633	28	0	0
B-145	BD	LITTLE RVR	FW	296.101	18	5	28	850	D	80	-12.133	11	0	0
B-350	INT	LITTLE RVR	FW	310.258	48	12	25	1381.667	*	48	1.683	31	0	0
0305010606														
B-320/ RS-02453	INT	BIG CEDAR CK	FW	227.705	48	13	27	924.6154	*	70	6.661	31	0	0

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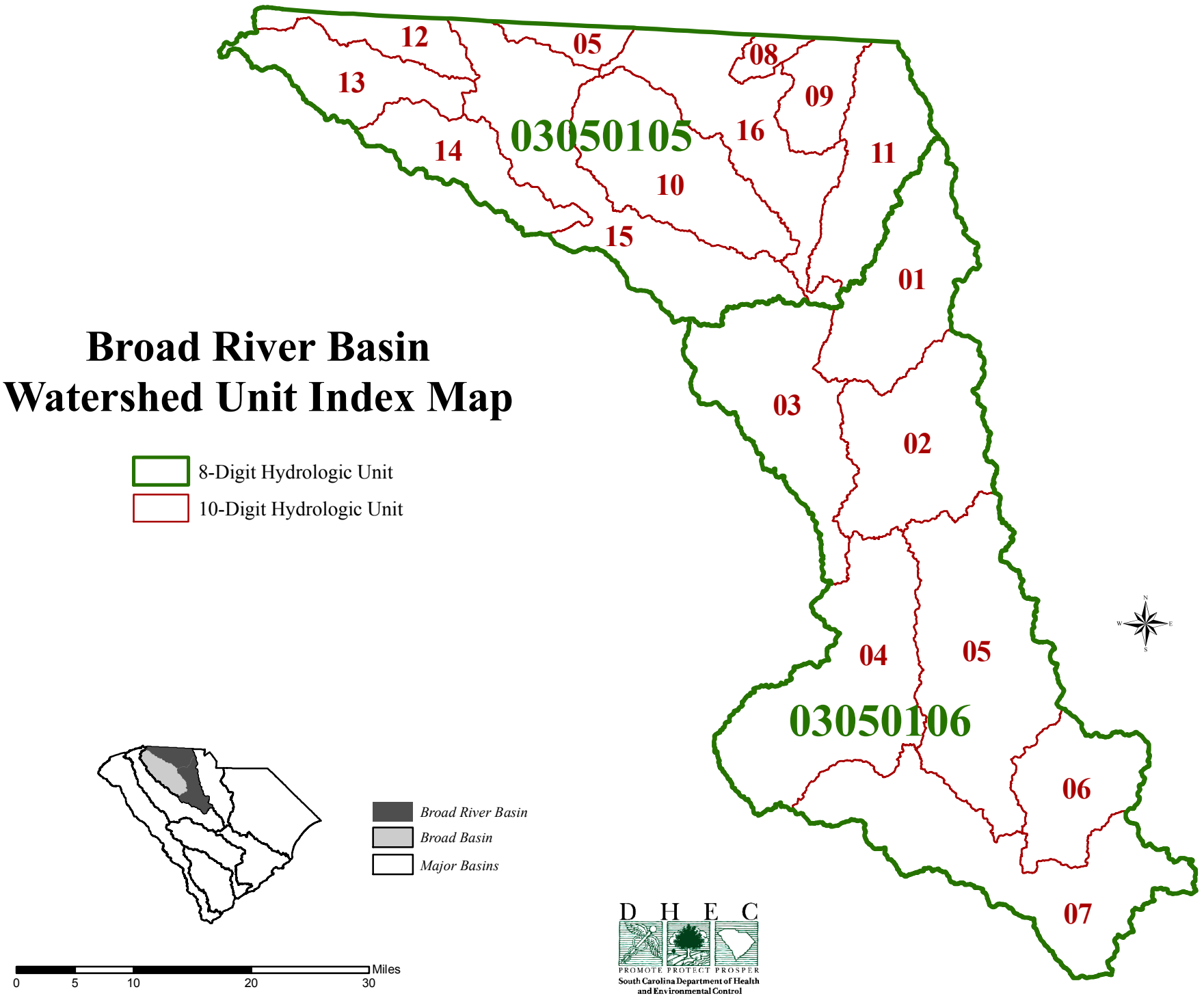
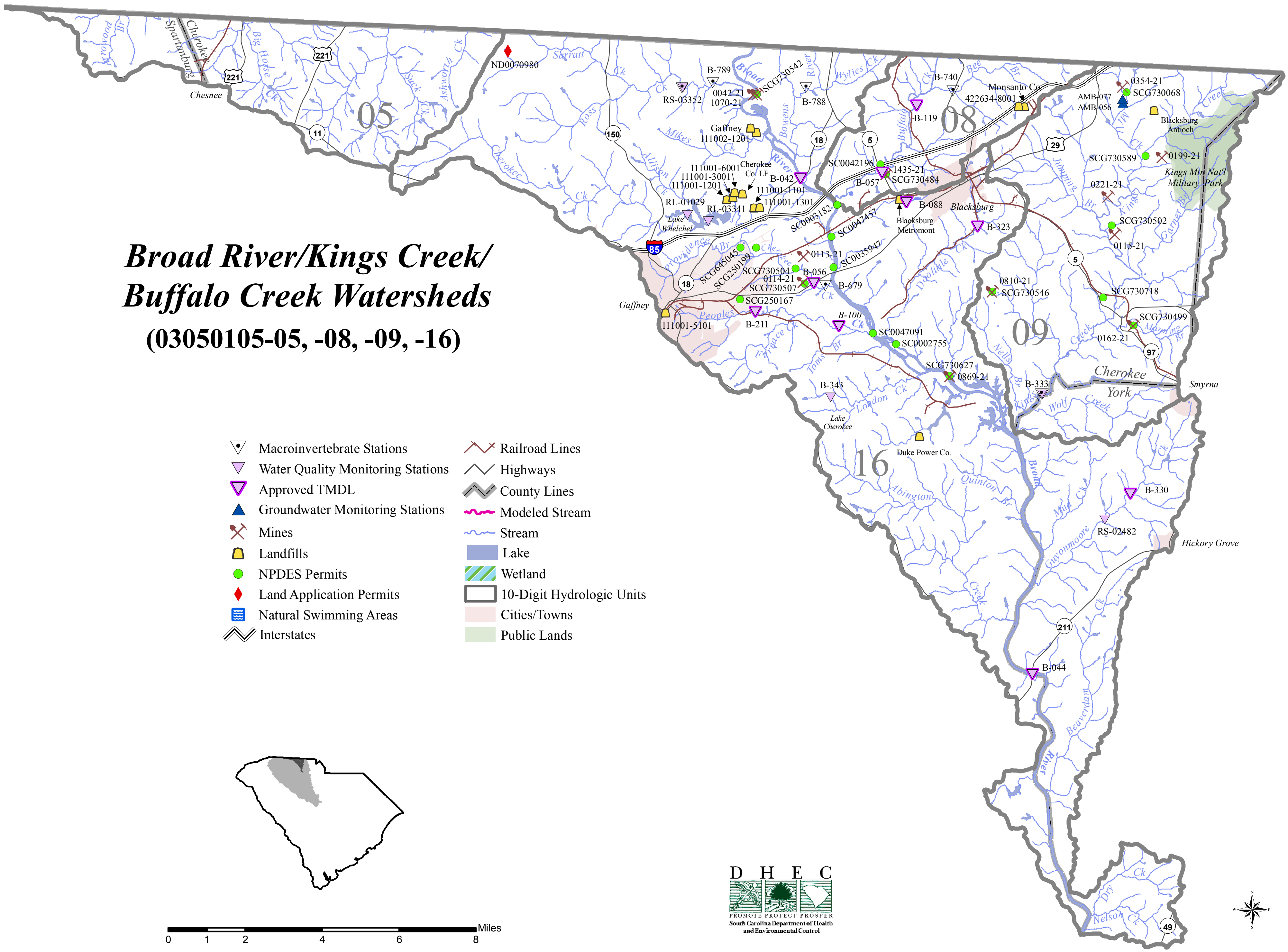
STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.	CU N	CU EXC.	CU %	MEAN EXC.	PB N	PB EXC.	PB %	MEAN EXC.
0305010602																			
B-074	BD	DRY FORK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
CL-023	BD	LAKE, CHESTER STATE PARK LAKE	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-075	INT	SANDY RVR	FW	18	0	0	0	18	0	0	0	18	1	6	34	18	1	6	60
0305010604																			
RS-04527	RS04	MCCLURES CK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-143																			
B-047	BD	BROAD RVR	FW	4	0	0	0	4	0	0	0	4	1	25	12	4	0	0	0
B-151		HELLERS CK																	
B-346	BD	LAKE, PARR RESERVOIR	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-831																			
B-751		CANNONS CK																	
B-328	BD	LAKE, MONTICELLO	FW	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0
RL-04370	RL04	LAKE, MONTICELLO	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-327	INT	LAKE, MONTICELLO	FW	19	0	0	0	19	0	0	0	19	0	0	0	19	0	0	0
RL-04374	RL04	LAKE, MONTICELLO	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
RS-03343	RS03	MUD CREEK	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-345	INT	LAKE, PARR RESERVOIR	FW	15	0	0	0	16	0	0	0	16	2	13	25	16	0	0	0
0305010607																			
B-236	BD	BROAD RVR	FW	8	1	13	18	8	1	13	330	8	2	25	28.5	8	0	0	0
RS-03517	RS03	CRIMS CREEK TRIB	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-800		CRIMS CK																	
B-801		WATEREE CK																	
B-110	BD	LAKE, ELIZABETH	FW	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0
B-316	BD	CRANE CK	FW	8	0	0	0	8	0	0	0	8	1	13	12	8	0	0	0
B-280	BD	SMITH BRANCH	FW	8	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0
B-337	INT	BROAD RVR	FW	15	0	0	0	15	0	0	0	15	0	0	0	15	0	0	0
0305010605																			
B-123	BD	WINNSBORO BRANCH	FW	3	0	0	0	3	0	0	0	3	1	33	11	3	0	0	0
B-077	BD	WINNSBORO BRANCH	FW	5	0	0	0	5	0	0	0	5	2	40	17.5	5	0	0	0
B-102	INT	JACKSON CK	FW	15	0	0	0	15	0	0	0	15	2	13	26	15	0	0	0
B-338	INT	MILL CK	FW	15	0	0	0	15	0	0	0	15	1	7	17	15	0	0	0
B-145	BD	LITTLE RVR	FW	4	1	25	16	4	1	25	120	4	2	50	15.5	4	0	0	0
B-350	INT	LITTLE RVR	FW	16	0	0	0	16	0	0	0	16	0	0	0	16	0	0	0
0305010606																			
B-320/ RS-02453	INT	BIG CEDAR CK	FW	16	0	0	0	16	0	0	0	16	2	13	19	16	0	0	0

Broad River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	HG N	HG EXC.	HG %	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
0305010602														
B-074	BD	DRY FORK	FW	4	0	0	4	0	0	0	4	0	0	0
CL-023	BD	LAKE, CHESTER STATE PARK LAKE	FW	4	0	0	4	0	0	0	4	0	0	0
B-075	INT	SANDY RVR	FW	17	0	0	18	0	0	0	18	0	0	0
0305010604														
RS-04527	RS04	MCCLURES CK	FW	4	0	0	4	0	0	0	4	0	0	0
B-143														
B-047	BD	BROAD RVR	FW	4	0	0	4	0	0	0	4	0	0	0
B-151		HELLERS CK												
B-346	BD	LAKE, PARR RESERVOIR	FW	4	0	0	4	0	0	0	4	0	0	0
B-831														
B-751		CANNONS CK												
B-328	BD	LAKE, MONTICELLO	FW	7	0	0	7	0	0	0	7	0	0	0
RL-04370	RL04	LAKE, MONTICELLO	FW	4	0	0	4	0	0	0	4	0	0	0
B-327	INT	LAKE, MONTICELLO	FW	18	0	0	19	0	0	0	19	0	0	0
RL-04374	RL04	LAKE, MONTICELLO	FW	4	0	0	4	0	0	0	4	0	0	0
RS-03343	RS03	MUD CREEK	FW	4	0	0	4	0	0	0	4	0	0	0
B-345	INT	LAKE, PARR RESERVOIR	FW	15	0	0	16	0	0	0	16	0	0	0
0305010607														
B-236	BD	BROAD RVR	FW	8	0	0	8	1	13	150	8	0	0	0
RS-03517	RS03	CRIMS CREEK TRIB	FW	4	0	0	4	0	0	0	4	0	0	0
B-800		CRIMS CK												
B-801		WATEREE CK												
B-110	BD	LAKE, ELIZABETH	FW	4	0	0	4	0	0	0	4	0	0	0
B-316	BD	CRANE CK	FW	8	0	0	8	0	0	0	8	0	0	0
B-280	BD	SMITH BRANCH	FW	8	0	0	8	0	0	0	8	0	0	0
B-337	INT	BROAD RVR	FW	15	0	0	15	0	0	0	15	0	0	0
0305010605														
B-123	BD	WINNSBORO BRANCH	FW	3	0	0	3	0	0	0	3	0	0	0
B-077	BD	WINNSBORO BRANCH	FW	5	0	0	5	1	20	26	5	1	20	120
B-102	INT	JACKSON CK	FW	15	0	0	15	1	7	34	15	1	7	91
B-338	INT	MILL CK	FW	15	0	0	15	0	0	0	15	0	0	0
B-145	BD	LITTLE RVR	FW	4	0	0	4	1	25	56	4	0	0	0
B-350	INT	LITTLE RVR	FW	16	0	0	16	0	0	0	16	0	0	0
0305010606														
B-320/ RS-02453	INT	BIG CEDAR CK	FW	16	0	0	16	1	6	43	16	1	6	110

Broad River Basin
Watershed Unit Index Map

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Buffalo Creek Watersheds
(03050105-05, -08, -09, -16)
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Water Quality Monitoring Stations
Approved TMDL
Groundwater Monitoring Stations
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09
16
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Gaffney
Blacksburg
Smyrna
Hickory Grove
Cherokee
York
Spartanburg
Kings Mtn Nat'l Military Park
Lake Whelchel
Lake Cherokee
Duke Power Co.
Monsanto Co.
Blacksburg Metromont
ND0070980
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B-057
B-088
B-323
B-056
B-679
B-211
B-100
B-343
B-333
B-330
B-044
RS-03352
RS-02482
RL-01029
RL-03341
SC0042196
SC0003182
SC0047457
SC0035947
SC0047091
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SCG730627
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SCG730504
SCG730507
SCG250167
SCG730542
111001-5101
422634-8001
AMB-077
AMB-056
Miles
0 1 2 4 6 8
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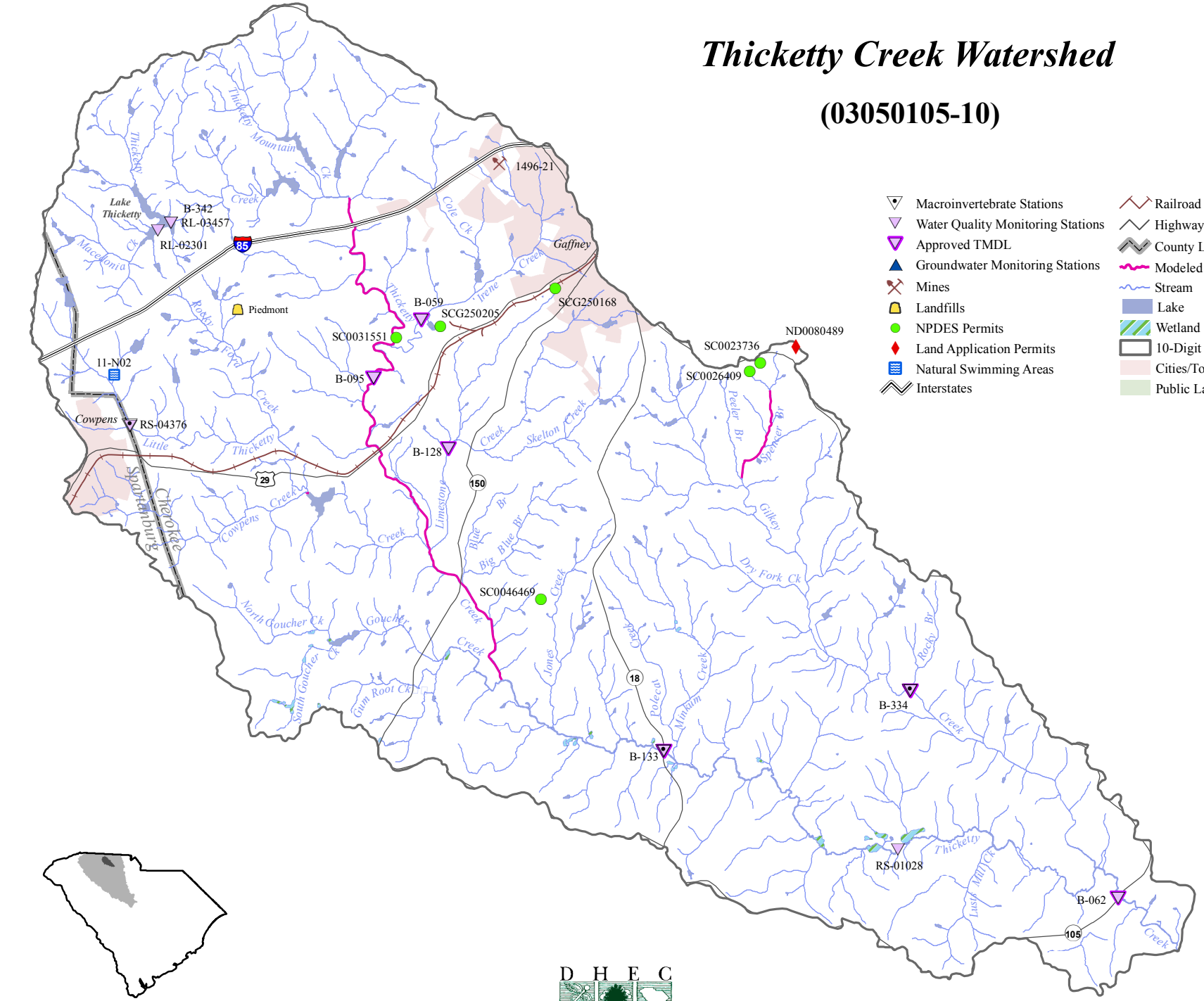
South Carolina Department of Health and Environmental Control

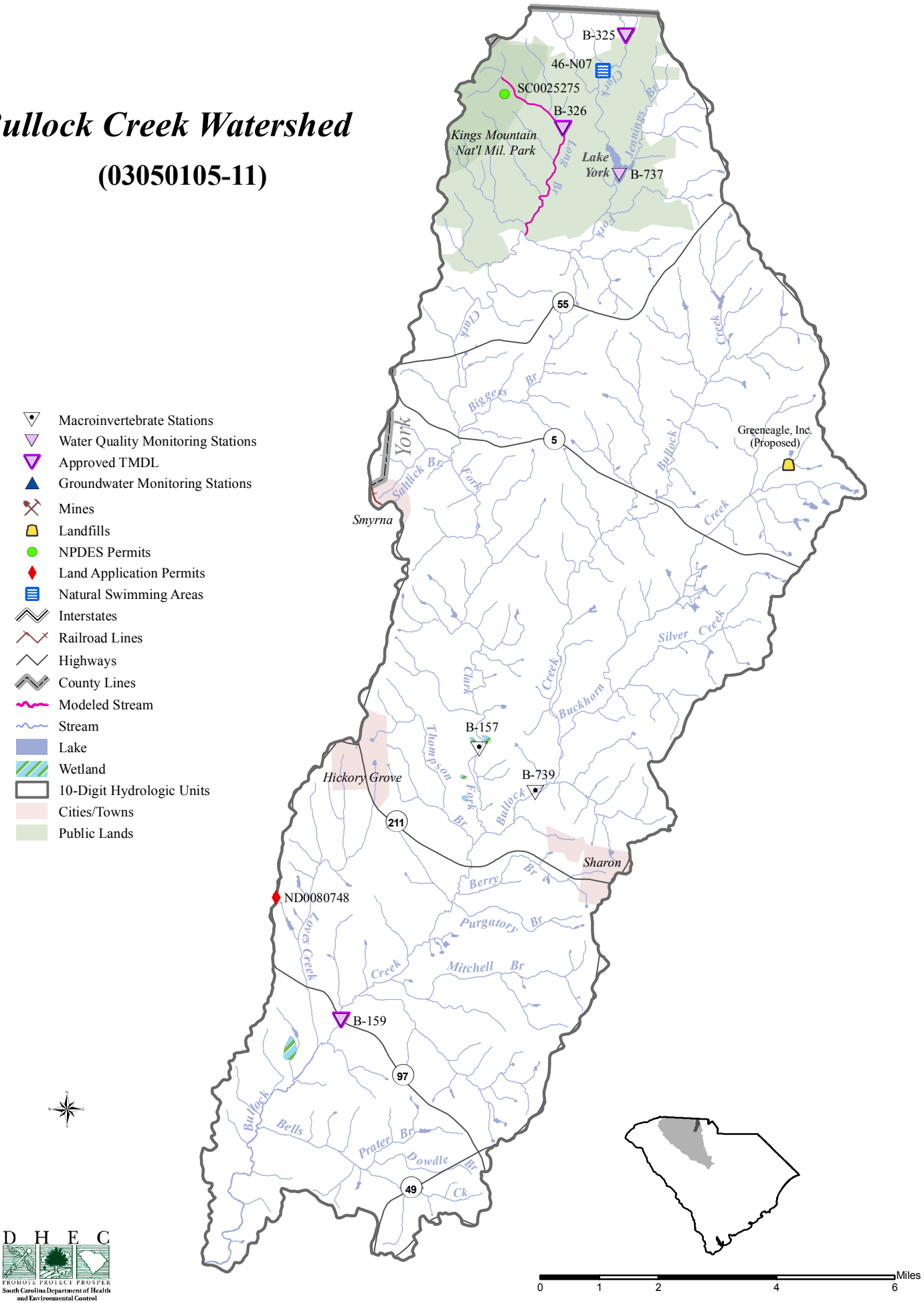
Thicketty Creek Watershed

(03050105-10)



Bullock Creek Watershed

(03050105-11)



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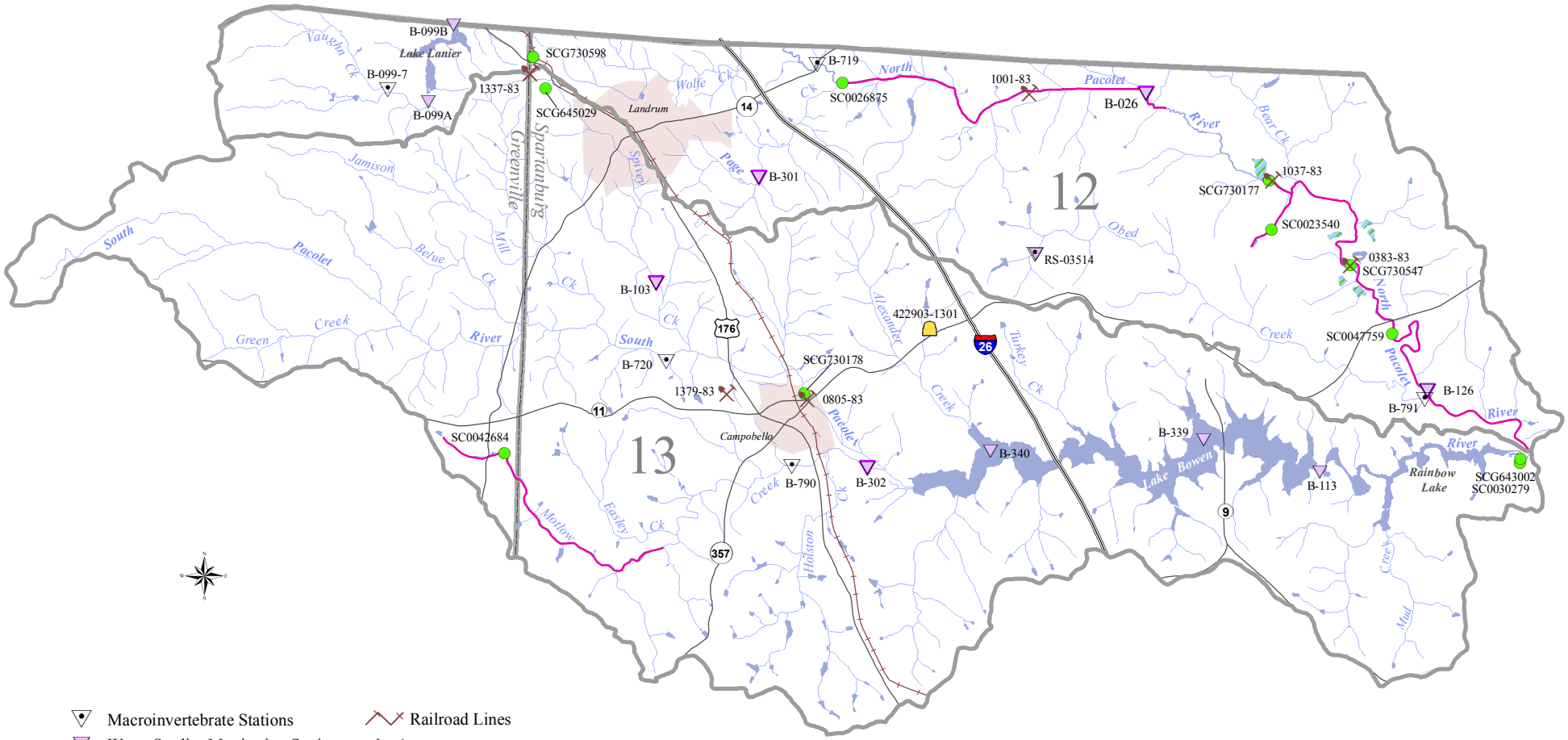
North Pacolet River and South Pacolet River Watersheds

(03050105-12, -13)



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- Water Quality Monitoring Stations
- Approved TMDL
- Groundwater Monitoring Stations
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- Landfills
- NPDES Permits
- Land Application Permits
- Natural Swimming Areas
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- Stream
- Lake
- Wetland
- 10-Digit Hydrologic Units
- Cities/Towns
- Public Lands

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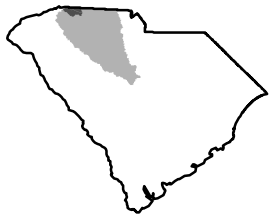
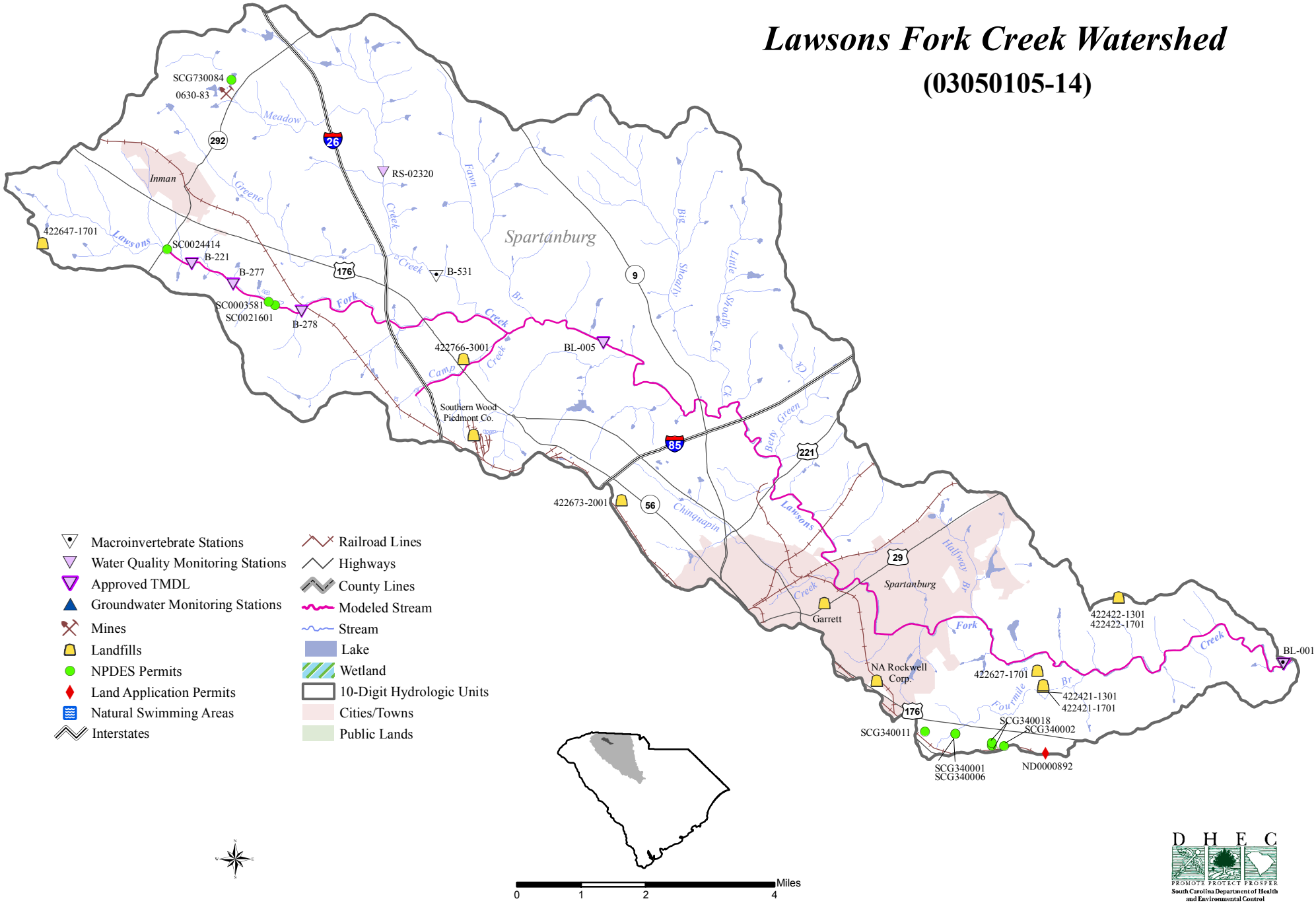


0 2.5 5 Miles

Lawsons Fork Creek Watershed

(03050105-14)



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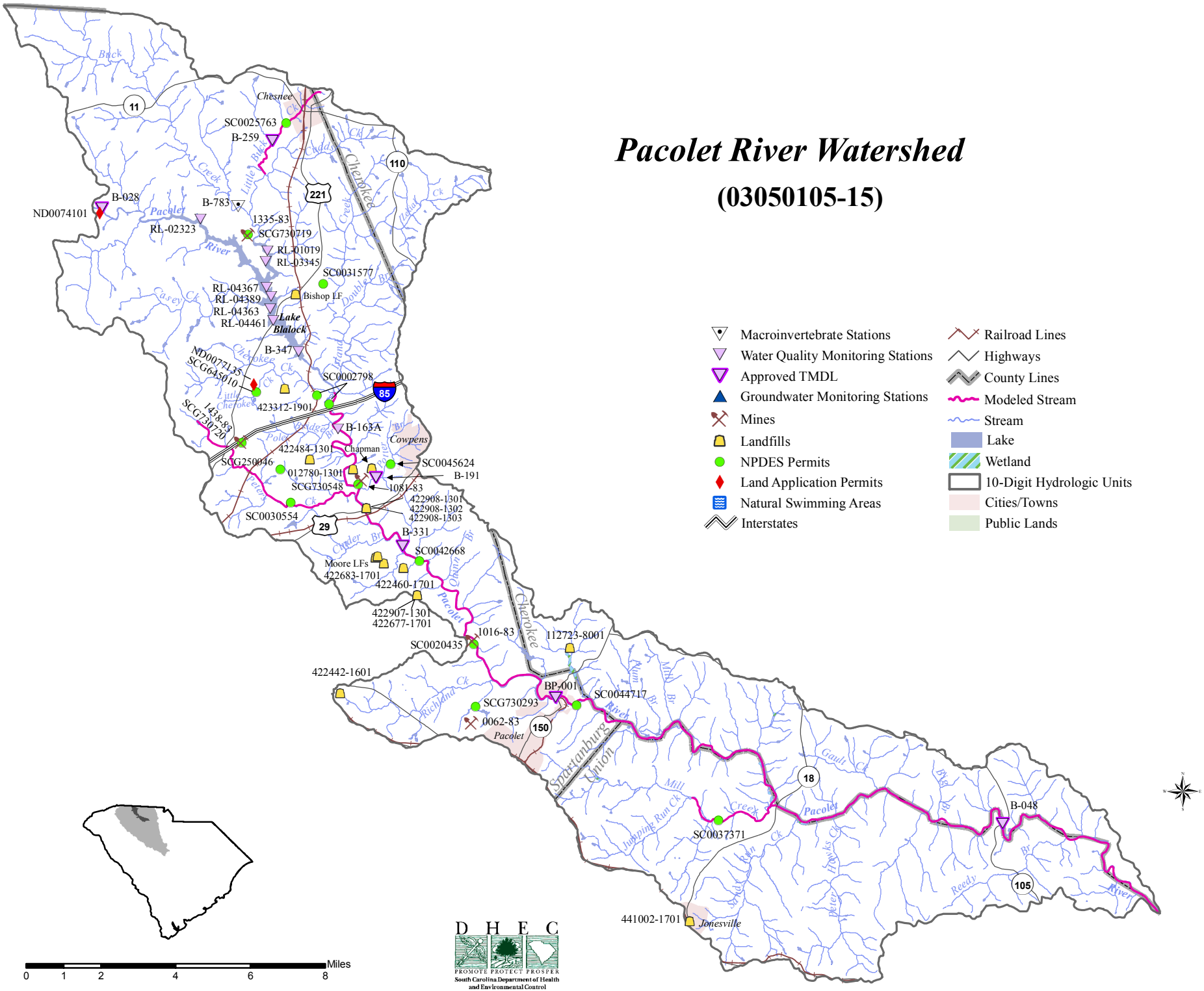
South Carolina Department of Health and Environmental Control


Pacolet River Watershed
(03050105-15)
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Wetland
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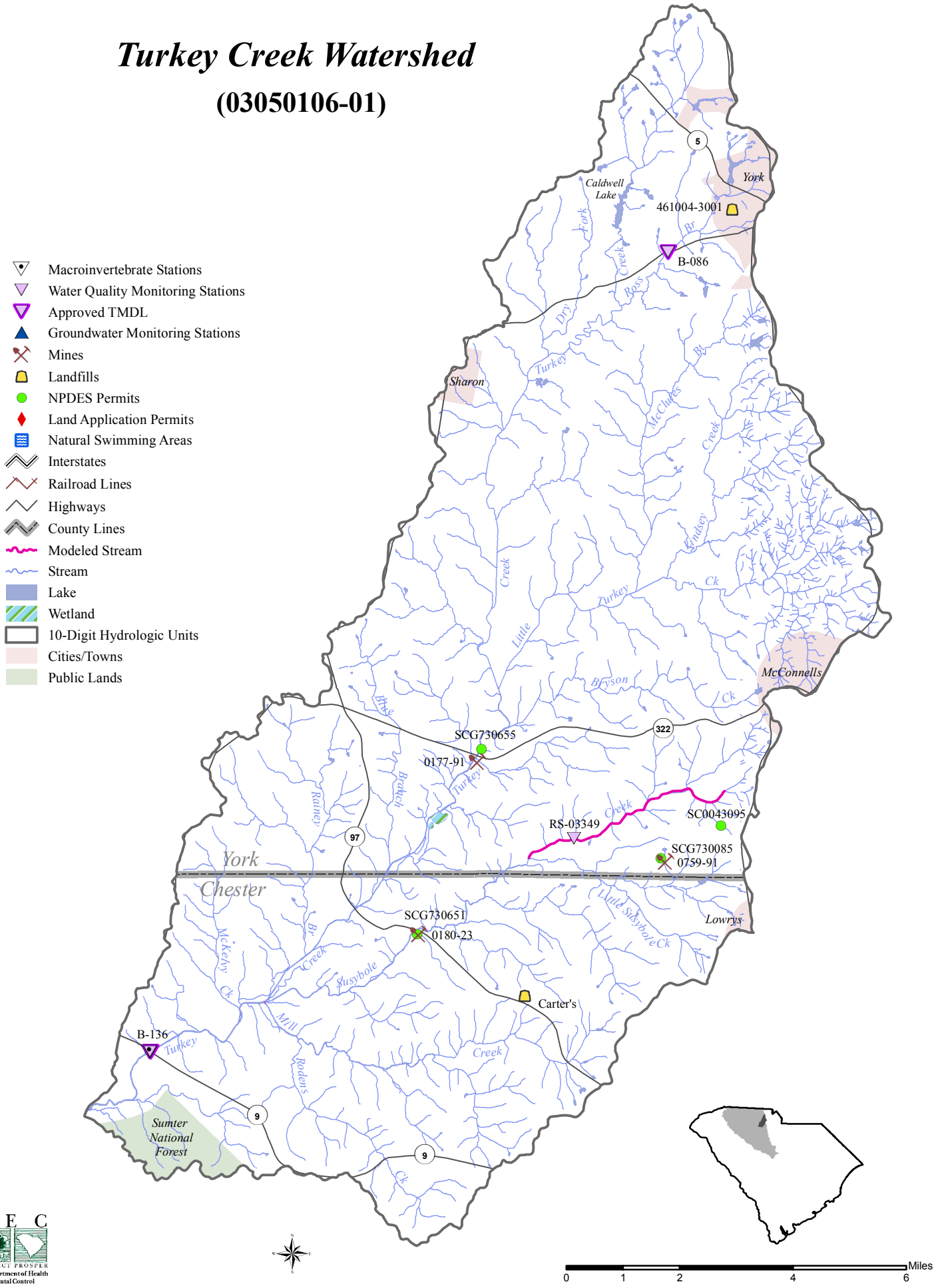
Public Lands
Lake Blalock
Bishop LF
Moore LFs
Jonesville
Spartanburg
Union
Chesnee
Cowpens
Chapman
Pacolet
Cherokee
Miles
0 1 2 4 6 8
D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

Turkey Creek Watershed

(03050106-01)



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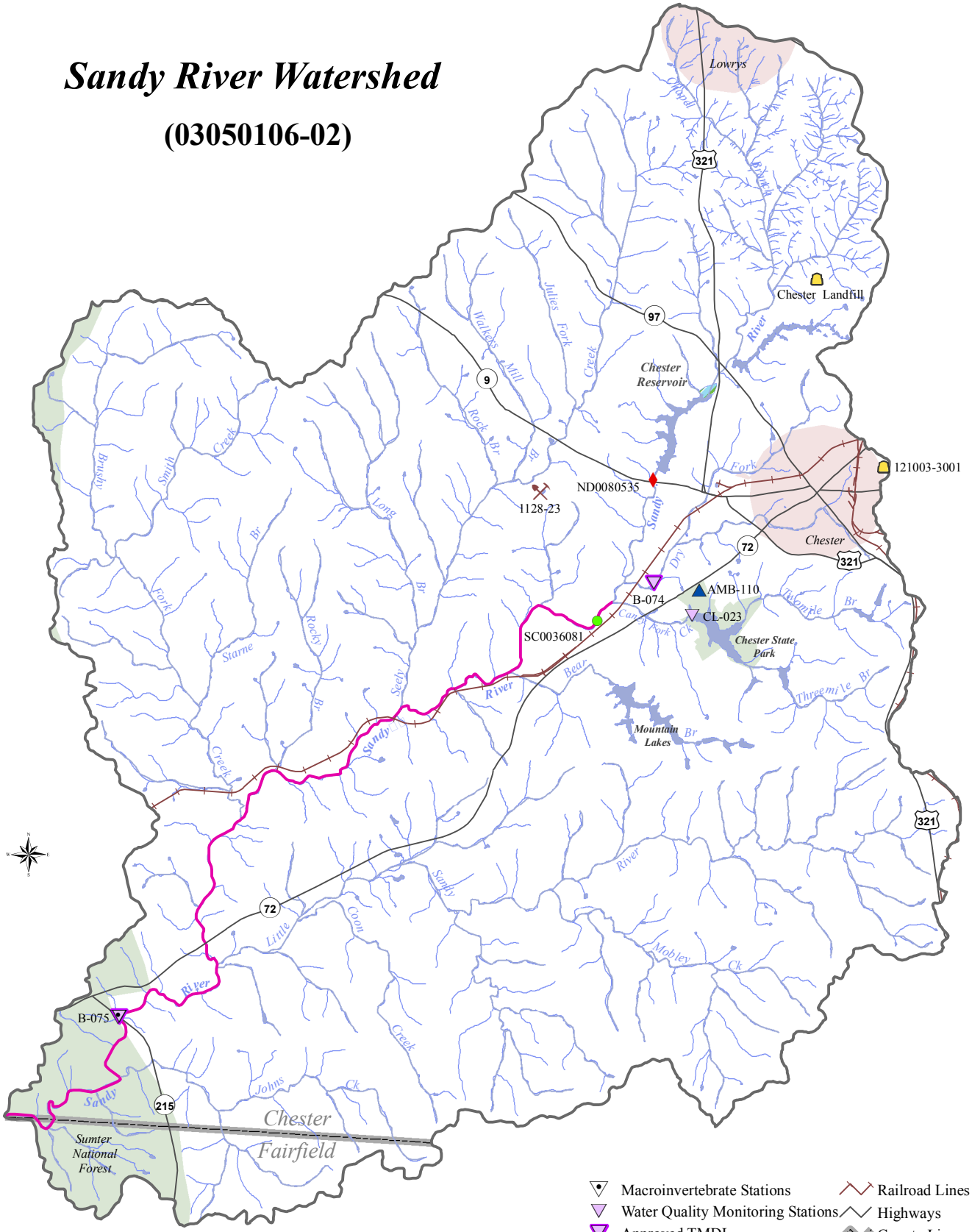
Sandy River Watershed

(03050106-02)



- Macroinvertebrate Stations
- Water Quality Monitoring Stations
- Approved TMDL
- Groundwater Monitoring Stations
- Mines
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- Land Application Permits
- Natural Swimming Areas
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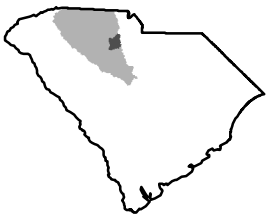
- County Lines
- Modeled Stream
- Stream
- Lake
- Wetland
- 10-Digit Hydrologic Units
- Cities/Towns
- Public Lands



0 1 2 4 Miles

DHEC
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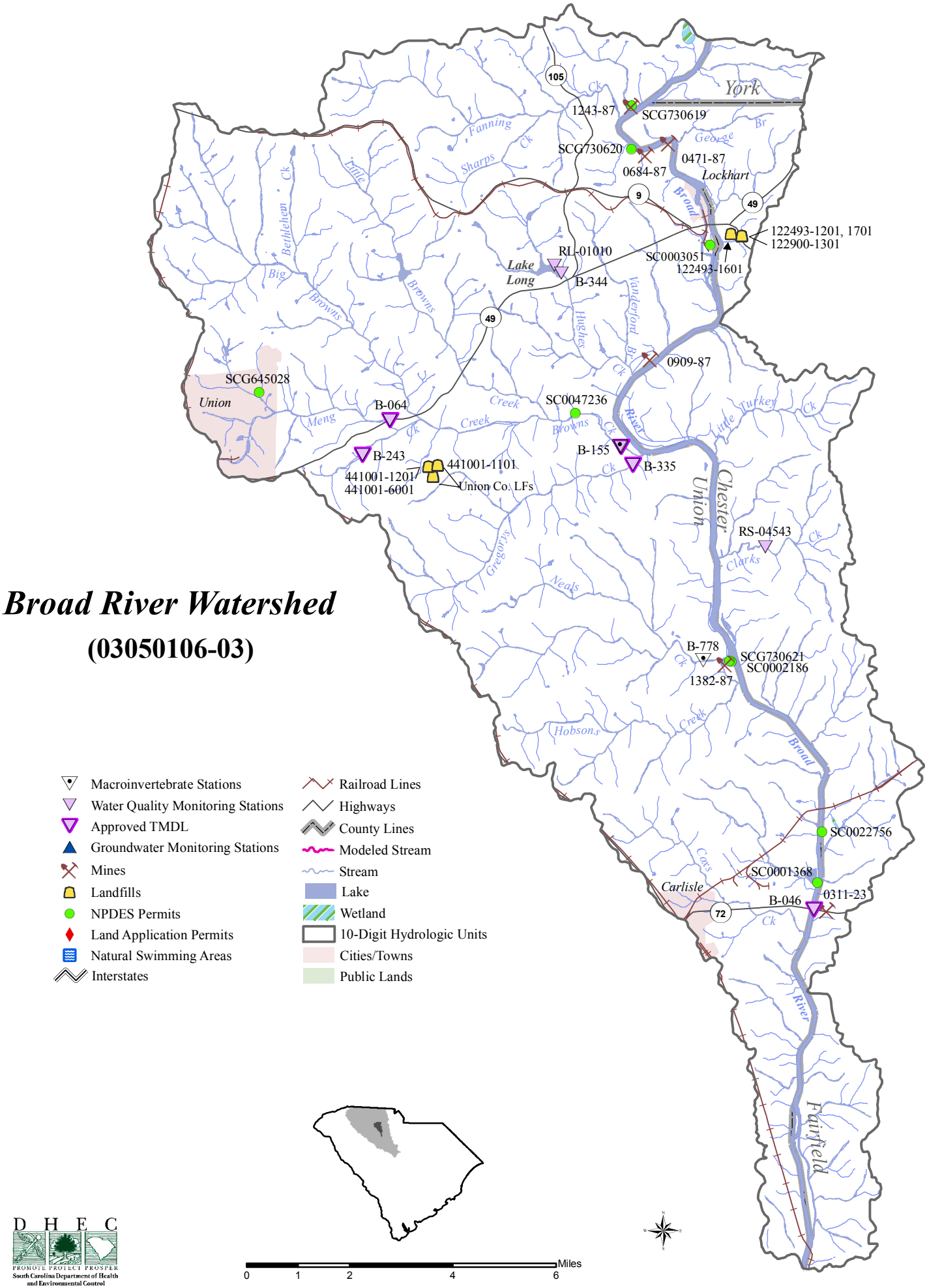
South Carolina Department of Health and Environmental Control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(03050106-03)
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Groundwater Monitoring Stations
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County Lines
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Wetland
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Union
Chester
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Lake Long
Carlisle
Lockhart
1243-87
SCG730619
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0471-87
0684-87
122493-1201, 1701
122900-1301
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B-344
0909-87
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B-064
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B-335
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441001-1101
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441001-6001
Union Co. LFs
RS-04543
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SCG730621
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1382-87
SC0022756
SC0001368
B-046
0311-23
Fanning Ck
Sharps Ck
Little Bethlehem Ck
Big Browns Creek
Meng Ck
Hughes Ck
Vanderford Br
Turkey Ck
Gregorys Ck
Neals Ck
Clarks Ck
Hobsons Creek
Coxs Ck
George Br
Broad River
105
9
49
72
0
1
2
4
6
Miles
D H E C
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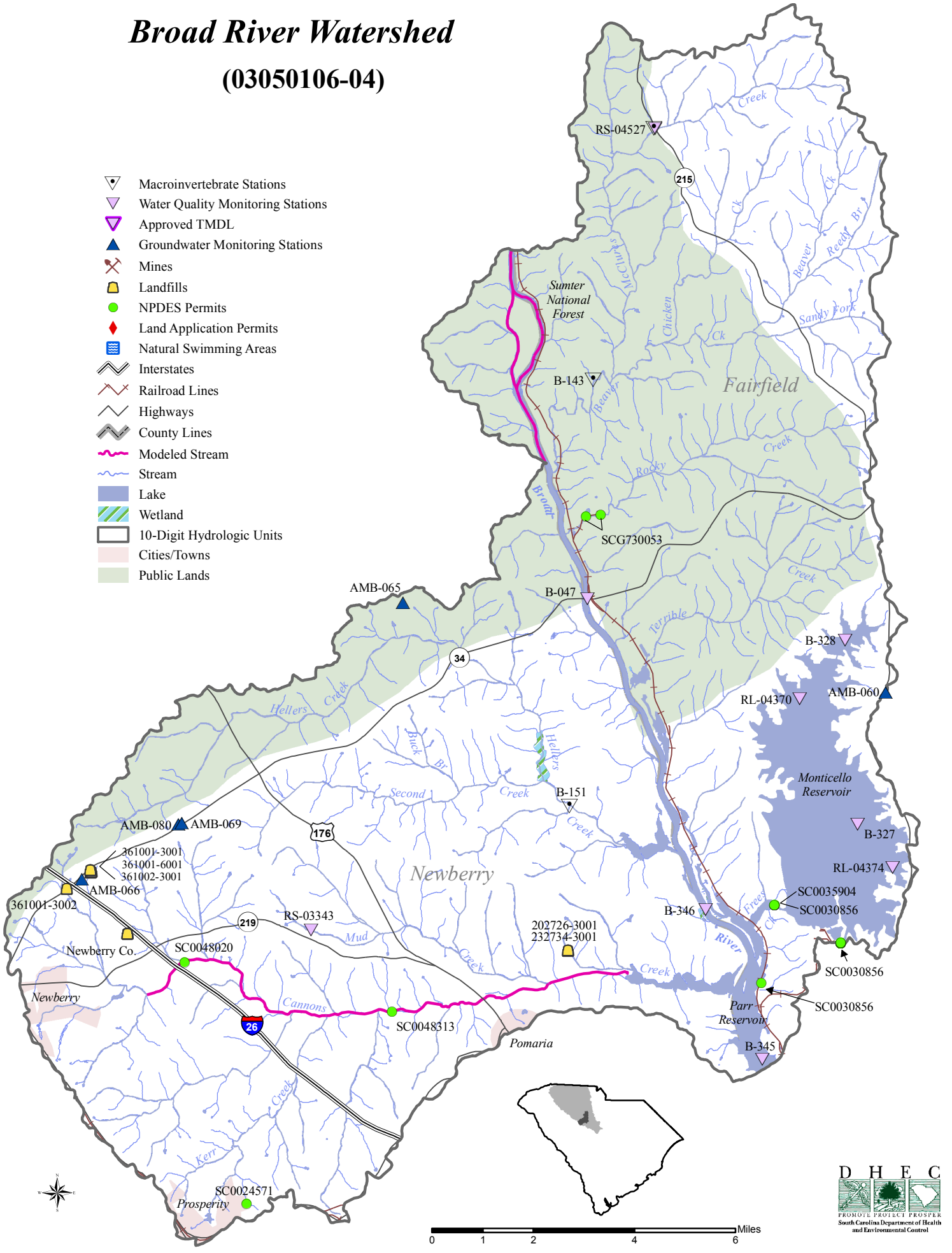
Broad River Watershed

(03050106-04)



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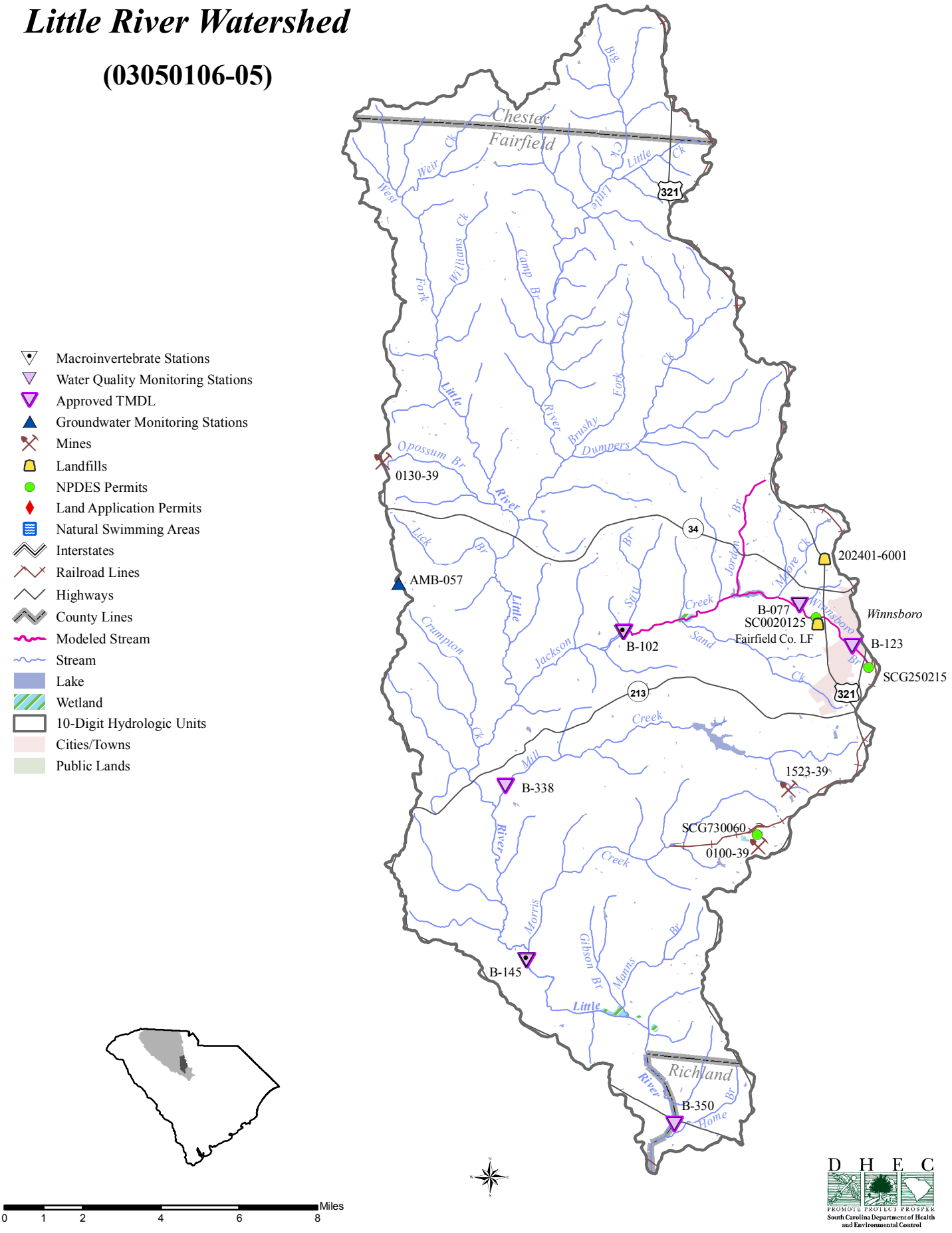
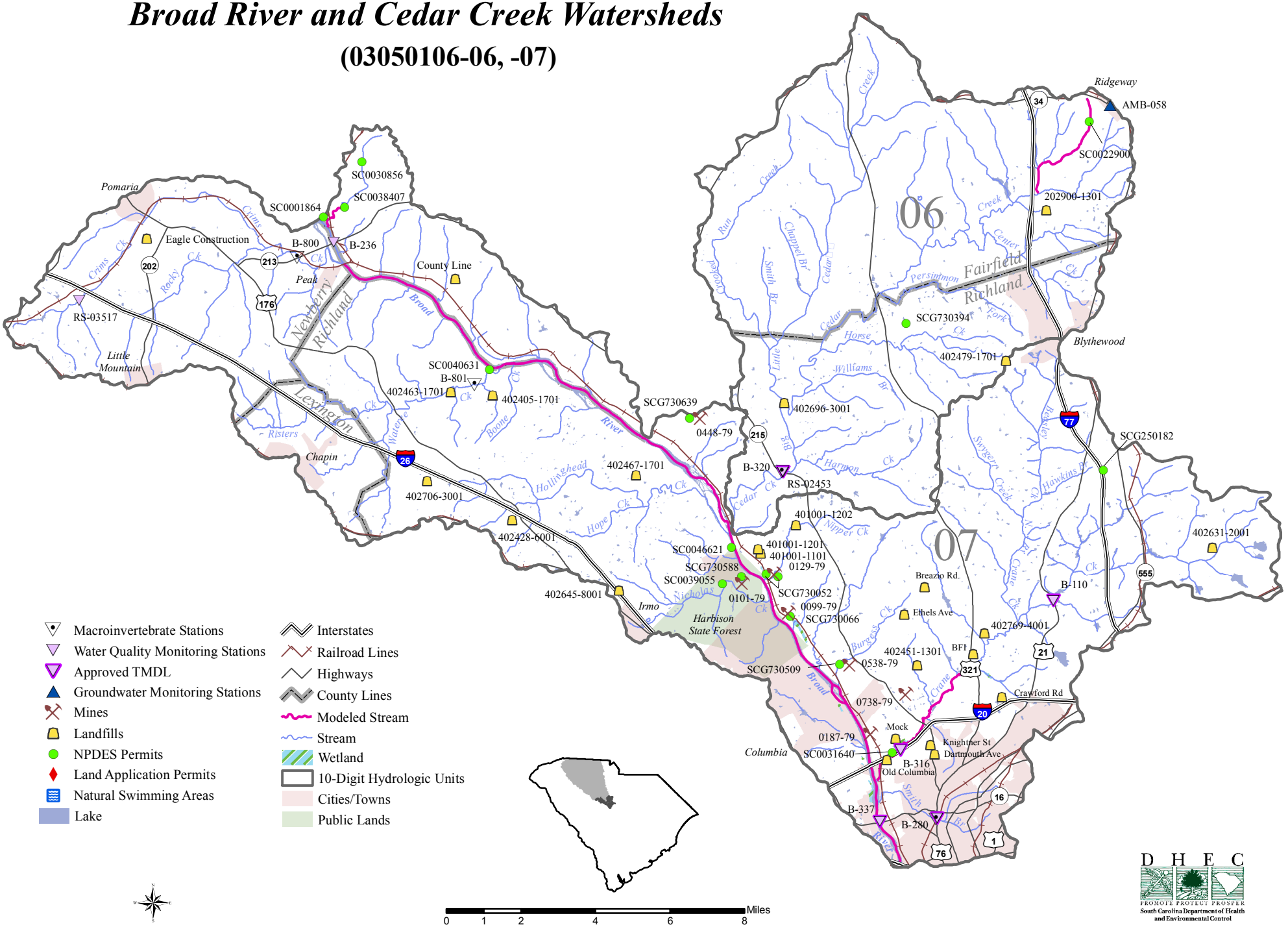
Little River Watershed

(03050106-05)



Broad River and Cedar Creek Watersheds

(03050106-06, -07)



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