

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

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
RL-01010	RL01	FW	LAKE LONG, 7.75 MI NE OF UNION & 3.5 MI W OF SUMTER NF
B-344	W	FW	LAKE JOHN D. LONG IN FOREBAY NEAR DAM
B-243	S	FW	TRIB 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 CK AT USFS RD 305 IN WOODS FERRY PK,
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

<i>LANDFILL NAME</i> <i>FACILITY TYPE</i>	<i>PERMIT #</i> <i>STATUS</i>
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, -116, -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

<i>MINING COMPANY</i> <i>MINE NAME</i>	<i>PERMIT #</i> <i>MINERAL</i>
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

<i>WATER USER STREAM</i>	<i>REGULATED CAP (MGD) PUMPING CAP (MGD)</i>
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.

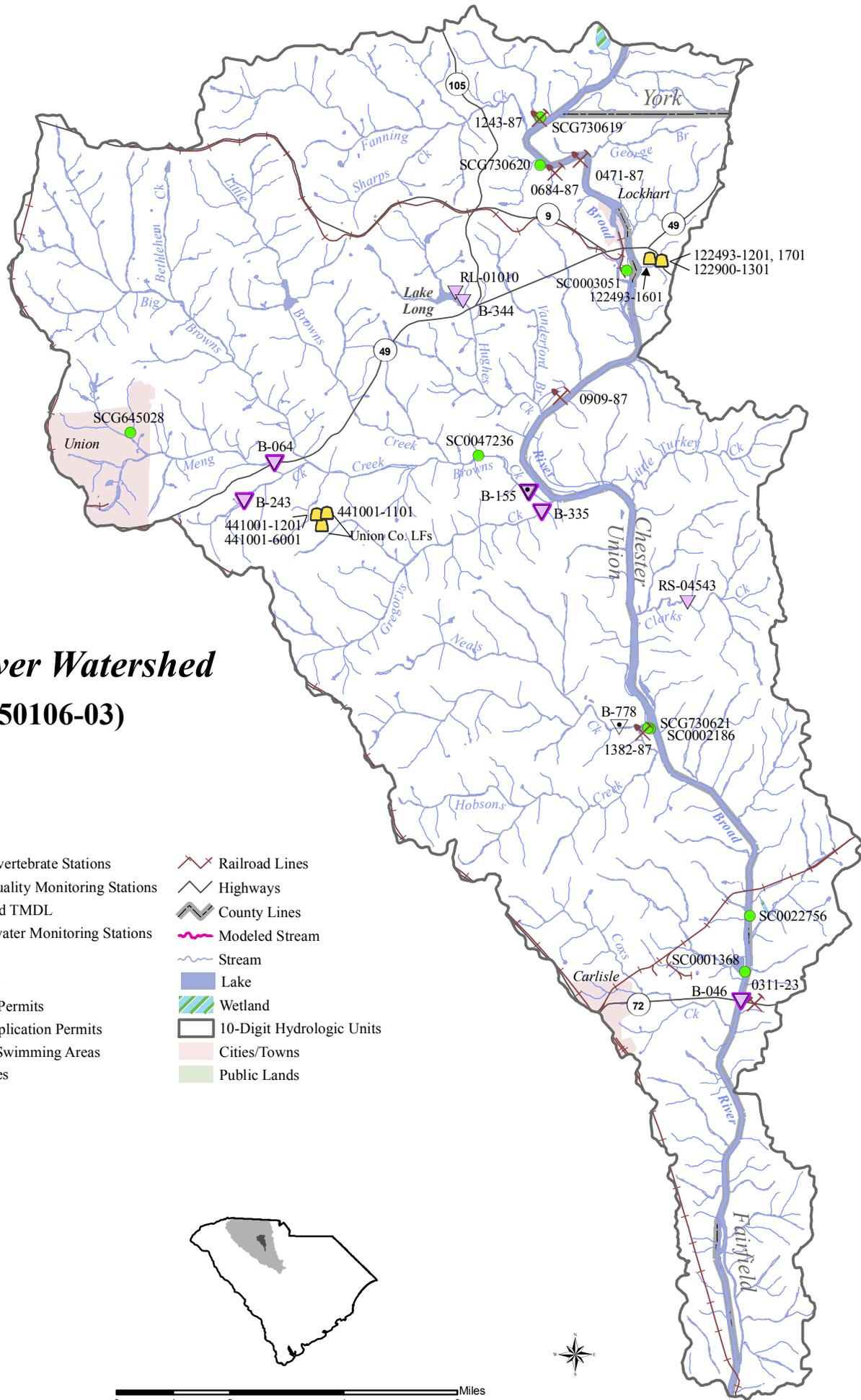
A TMDL was also developed for SCDHEC and approved by EPA for fecal coliform bacteria in **Browns Creek** at water quality monitoring site **B-155**. One facility that has fecal coliform limits in its NPDES permit (Union County Meng Creek WWTP SC0047236) discharges into Browns Creek. There are no Municipal 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.



Broad River Watershed

(03050106-03)

- | | | | |
|--|-----------------------------------|--|---------------------------|
| | Macroinvertebrate Stations | | Railroad Lines |
| | Water Quality Monitoring Stations | | Highways |
| | Approved TMDL | | County Lines |
| | Groundwater Monitoring Stations | | Modeled Stream |
| | Mines | | Stream |
| | Landfills | | Lake |
| | NPDES Permits | | Wetland |
| | Land Application Permits | | 10-Digit Hydrologic Units |
| | Natural Swimming Areas | | Cities/Towns |
| | Interstates | | Public Lands |

