

**03050103-02**  
**(Twelvemile Creek)**

**General Description**

The South Carolina portion of watershed 03050103-02 (formerly a portion of 03050103-030) is located in Lancaster County and consists primarily of *Twelvemile Creek* and its tributaries. The watershed occupies 19, 177 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 68.2% forested land, 18.5% agricultural land, 9.6% urban land, 1.7% forested wetland (swamp), 1.5% barren land, and 0.5% water.

Twelvemile Creek originates in North Carolina and drains into the Catawba River. Along the way, Twelvemile Creek accepts drainage from Sixmile Creek (Cow Branch, Tarkill Branch, Long Branch), Rone Branch, Millstone Branch, and Todd Branch. There are a total of 401.4 stream miles in the entire Twelvemile Creek watershed (92.2 miles within South Carolina) and 732.9 acres of lake waters (151.3 acres within South Carolina), all classified FW.

**Surface Water Quality**

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
CW-176	P/W	FW	SIXMILE CREEK AT S-29-54
CW-083	S/INT	FW	TWELVEMILE CREEK AT S-29-55 0.3 MI NW OF VAN WYCK
(CW-041)	S/INT	FW	CATAWBA RIVER AT SC 5 AT BOWATER

*Sixmile Creek (CW-176)* – Aquatic life and recreational uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration and a significant increasing trend in five-day biochemical oxygen demand. Significant decreasing trends in total phosphorus concentration, total nitrogen concentration, and fecal coliform bacteria suggest improving conditions for these parameters.

*Twelvemile Creek (CW-083)* – Aquatic life uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration and a significant increasing trend in five-day biochemical oxygen demand and total phosphorus concentration. Recreational uses are not supported due to fecal coliform excursions; however, a significant decreasing trend in fecal coliform bacteria suggests improving conditions for this parameter.

*Catawba River (CW-041)* – This site is actually located in 03050103-06, but is situated where Twelvemile Creek enters the river. Aquatic life and recreational uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand, total nitrogen concentration, total suspended solids, and fecal coliform bacteria concentration.

## NPDES Program

### *Active NPDES Facilities*

*RECEIVING STREAM  
FACILITY NAME*

*NPDES#  
TYPE*

TARKILL BRANCH TRIBUTARY  
BORAL BRICKS/MILLER MINE

SCG730641  
MINOR INDUSTRIAL

## Nonpoint Source Management Program

### *Land Disposal Activities*

#### **Landfill Facilities**

*LANDFILL NAME  
FACILITY TYPE*

*PERMIT #  
STATUS*

FRANK LANDFILL  
C&D

292900-1301  
INACTIVE

HOOD SHORT TERM C&D LANDFILL  
C&D

292902-1301  
INACTIVE

### *Mining Activities*

*MINING COMPANY  
MINE NAME*

*PERMIT #  
MINERAL*

ASHE DIV., BORAL BRICKS, INC.  
MILLER PIT

0003-57  
SHALE

## Growth Potential

This area has high growth potential as it is nearby to rapidly growing sections of the Charlotte, N.C. urban area and has good access via the four-lane U.S. 521 into that city. Public sewer has now become available along U.S. Hwy 521 and surrounding areas to compliment existing public water. The result of this new infrastructure has been an explosion of residential and commercial growth. The Del Webb Carolina Lakes project is a good example of this growth, which has fueled the approval of thousands of new residential lots in a variety of planned communities and subdivisions. This area of Lancaster County is currently experiencing rapid residential growth. This trend is expected to continue for the foreseeable future. Commercial growth is also occurring along the U.S. Hwy 521 corridor.

## Watershed Restoration and Protection

### *Total Maximum Daily Loads (TMDLs)*

A TMDL was developed for SCDHEC using the load duration curve methodology and approved by the EPA for *Sixmile Creek* in Union and Mecklenburg Counties, NC and Lancaster County, SC (monitoring site CW-176). The TMDL determines the maximum amount of fecal coliform bacteria that Sixmile Creek at CW-176 can receive from all pollution sources and still meet water quality standards. At the time the TMDL was approved there were no permitted continuous dischargers of fecal coliform in the watershed. However portion of the watershed is within the City of Charlotte, N.C., a Phase I MS4 (a non-continuous discharger). Potential sources of fecal coliform pollution in the watershed contributing to the impairment of Sixmile

Creek include runoff from the MS4, leaking sanitary sewers, wildlife, cattle watering in creeks, and failing onsite wastewater disposal (OSWDs) or septic systems. The TMDL requires a reduction of 92% in the current nonpoint source load to the creek to meet standards.

A TMDL was developed for SCDHEC using the load duration curve methodology and approved by the EPA for *Twelvemile Creek* in Union and Mecklenburg Counties, NC and Lancaster County, SC (monitoring site CW-083). The TMDL determines the maximum amount of fecal coliform bacteria that Twelvemile Creek at CW-083 can receive from all pollution sources and still meet water quality standards. At the time the TMDL was approved there was one permitted continuous discharger of fecal coliform in the North Carolina portion of the watershed. At that time a small portion of the watershed within North Carolina was within a MS4 designated area. Potential sources of fecal coliform pollution in the watershed contributing to the impairment of Twelvemile Creek include runoff from MS4 areas, leaking sanitary sewers, sanitary sewer overflows (SSOs), cattle watering in creeks, land application of manure, and failing onsite wastewater disposal (OSWDs). The TMDL requires a reduction of 98% in the current nonpoint source load to the creek to meet standards. For more detailed information on TMDLs, please visit [www.scdhec.gov/tmdl](http://www.scdhec.gov/tmdl).

### ***Special Projects***

#### **NPS Assessment and TMDL Development for Nutrients in the Catawba River Basin**

SCDHEC continues to address nutrient loading concerns in the impaired reservoirs (Fishing Creek, Great Falls, and Cedar Creek Reservoirs and Lake Wateree) of the lower Catawba-Wateree Basin using the WARMF (Watershed Analysis Risk Management Framework) water quality model. This watershed model was updated previously through 2005, but changes in phosphorus loading, land use, and population made the model out dated in terms of the model time period. Significant changes in the watershed since 2005 include new phosphorus limits on the three Charlotte-Mecklenburg WWTPs in the Sugar Creek watershed, closing of two major industrial dischargers in the South Carolina portion of the basin, and a significant increase in population and developed land use in the Charlotte – Rock Hill area. In late 2012, SCDHEC began an update of the model that will incorporate these changes in the watershed and make the model as current as feasible. SCDHEC intends to use the updated model for nutrients and pH TMDLs by determining new Wasteload Allocations for point source dischargers and Municipal Separate Storm Sewer Systems (MS4s) and Load Allocations for the nonpoint sources within the Basin.

#### **Catawba River Water Supply Project Expansion**

The Catawba River Water Supply Project (CRWSP) is a joint venture between Lancaster County in South Carolina and Union County in North Carolina, which provides drinking water to the majority of both counties. To better manage water supplies during drought conditions, the CRWSP plans to expand its off-river reservoir to provide additional storage and less reliance on Catawba River flows.

# Twelvemile Creek Watershed

(03050103-02)

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

