

03040201-07

(*Black Creek*)

General Description

Watershed 03040201-07 (formerly 03040201-110) is located in Chesterfield, Darlington, and Florence Counties and consists primarily of lower ***Black Creek*** and its tributaries from the Lake Robinson dam to the Pee Dee River. The watershed occupies 186,969 acres of the Sandhills and Upper Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 48.8% agricultural land, 19.5% forested land, 17.4% forested wetland, 11.4% urban land, 2.1% scrub/shrub land, 0.4% water, 0.3% nonforested wetland, and 0.1% barren land.

This section of Black Creek accepts drainage from its upper reach together with Beaverdam Creek (King Millpond, Beaverdam Millpond) before flowing through Lake Prestwood (Dry Branch, Horsepen Branch) in the City of Hartsville. Downstream of the lake, Black Creek accepts drainage from Snake Branch, Spring Branch, Boggy Swamp (Little Boggy Swamp, McIntosh Millpond), Everlasting Branch (Gilbert Lake), Seed Branch (Little Seed Branch, Leavenworth Branch, Chapmans Pond), Horse Creek (Jeffords Millpond), and Lucas Creek. Swift Creek (Indian Creek, Ramsey Pond, Bellyache Creek) enters the system next, flowing through the City of Darlington, followed by High Hill Creek (Star Fork Branch, McCall Branch), Ashby Branch, and Polk Swamp Creek. The Black Creek Watershed drains into the Great Pee Dee River. There are 371.3 stream miles and 920.8 acres of lake waters in this watershed. Beaverdam Creek and Black Creek are classified FW* (dissolved oxygen not less than 4 mg/l and pH between 5.0 and 8.5) from the Lake Robinson Dam to the U.S. Hwy. 52 crossing (just upstream of Horse Creek and Lucas Creek). Tributaries to these stream reaches along with the remaining streams in the watershed are classified FW.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
PD-159	S/W	FW*	BLACK CREEK AT S-16-23 4.7 MI NW OF HARTSVILLE
PD-268	S/W	FW*	SONOVISTA CLUB HARTSVILLE DOCK OFF PRESTWOOD LAKE
PD-081	S/W	FW*	PRESTWOOD LAKE AT US 15
PD-258	S/W	FW	SNAKE BRANCH AT RAILROAD AVENUE IN HARTSVILLE
PD-137	S/W	FW	SNAKE BRANCH AT WOODMILL STREET IN HARTSVILLE
PD-021	P/W	FW*	BLACK CREEK AT S-16-18 1 MI NNE OF HARTSVILLE
PD-330	S/W	FW*	BLACK CREEK AT HIGHWAY 15 BYPASS
PD-023	P/W	FW*	BLACK CREEK AT S-16-13 5.5 MI NE OF HARTSVILLE
RS-02311	RS02	FW	UNNAMED TRIB TO LITTLE BOGGY SWAMP AT S-16-50
RS-03507	RS03/BIO	FW	BOGGY SWAMP AT S-16-50, 4.9 MI NE OF HARTSVILLE
RS-01043	RS01	FW*	BLACK CK NEAR DIRT RD OFF CR 41, 6 MI NE OF HARTS
PD-024A	SPRP	FW*	BLACK CREEK AT US 401 & 52, 6 MI NW OF DARLINGTON
PD-025	P/W	FW	BLACK CREEK AT S-16-133 2.25 MI NE OF DARLINGTON
RS-03491	RS03	FW	BLACK CREEK AT SC 34, 1.6 MI NE OF DARLINGTON
RS-01023	RS01	FW	SWIFT CREEK TRIB AT CR 213, JUST N OF DARLINGTON
PD-141	S/W	FW	TILE DISCH TO DITCH ACROSS RD AT DARLINGTON WWTP
PD-027	P/W	FW	BLACK CREEK AT S-16-35, 5.5 MI SE OF DARLINGTON
PD-103	S/W	FW	HIGH HILL CREEK AT US 52 ON COUNTY LINE
PD-078	W/INT	FW	BLACK CREEK AT SC 327

Black Creek – There are eleven SCDHEC monitoring sites along this section of Black Creek. This is a blackwater system, characterized by naturally low pH conditions. At the furthest upstream site (**PD-159**), aquatic life and recreational uses are fully supported; however, there are significant decreasing trends in dissolved oxygen concentration and increasing trends in turbidity. A significant decreasing trend in five-day biological oxygen demand suggests improving conditions for this parameter. At the next site downstream (**PD-021**), aquatic life uses are fully supported and significant decreasing trends in five-day biological oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. 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.

At the next site (**PD-330**), aquatic life and recreational uses are fully supported. There is a significant increasing trend in pH. Significant decreasing trends in five-day biological oxygen demand, turbidity, and fecal coliform bacteria concentration suggest improving conditions for these parameters. Further downstream (**PD-023**), aquatic life and recreational uses are fully supported. There is a significant increasing trend in pH. Significant decreasing trends in five-day biological oxygen demand, turbidity, total phosphorus and total nitrogen concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters. Aquatic life uses are not supported at **RS-01043** due to occurrences of copper in excess of the aquatic life acute criterion. Recreational uses are fully supported at this site. Aquatic life and recreational uses are fully supported at **PD-024A**; however, there is a significant decreasing trend in dissolved oxygen concentration. There is a significant decreasing trend in pH.

Further downstream (**PD-025**), aquatic life uses are fully supported; however, there are significant decreasing trends in dissolved oxygen concentration and increasing trends in turbidity. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. There is a significant increasing trend in pH. Significant decreasing trends in five-day biological oxygen demand, total phosphorus concentration and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are partially supported due to fecal coliform bacteria excursions. Aquatic life and recreational uses are fully supported at **RS-03491**. Although pH excursions occurred at this site, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

At the next site downstream (**PD-027**), aquatic life and recreational uses are fully supported. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. There is a significant increasing trend in pH. Significant decreasing trends in five-day biological oxygen demand, total phosphorus concentration, and total nitrogen concentration suggest improving conditions for these parameters. DDD (a metabolite of DDT) was detected in the 2003 sediment sample. Although the use of DDT was banned in 1973, it is very persistent in the environment. At the furthest downstream site (**PD-078**), aquatic life and recreational uses are fully supported and significant decreasing trends in five-day biological oxygen demand and turbidity suggest improving conditions for these parameters.

Lake Prestwood - There are two SCDHEC monitoring sites along Lake Prestwood. At the uplake site (**PD-268**), aquatic life and recreational uses are fully supported. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. At the downlake site (**PD-081**), aquatic life and recreational uses are fully supported. Significant decreasing trends in five-day biological oxygen demand and fecal coliform bacteria concentration suggest improving conditions for these parameters. *Fish tissue samples from Lake Prestwood indicate no advisories are needed at this time.*

Snake Branch - There are two SCDHEC monitoring sites along Snake Branch. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. At the upstream site (**PD-258**), aquatic life uses are not supported due to pH excursions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. There is a significant increasing trend in pH. Significant decreasing trends in five-day biological oxygen demand and total phosphorus concentration 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.

At the downstream site (**PD-137**), aquatic life and recreational uses are fully supported. Significant decreasing trends in five-day biological oxygen demand and increasing trends in dissolved oxygen concentration suggest improving conditions for these parameters. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Unnamed Tributary to Little Boggy Swamp (RS-02311) – This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although dissolved oxygen and pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Aquatic life and recreational uses are fully supported.

Boggy Swamp (RS-03507) – This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Aquatic life uses are fully supported. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Swift Creek Tributary (RS-01023) - Aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life acute criterion. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Tilefield to Ditch to Swift Creek (PD-141) - This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Aquatic life uses are fully supported. There is a significant decreasing trend in pH. A

significant decreasing trend in total phosphorus suggests improving conditions for this parameter. Recreational uses are not supported due to fecal coliform bacteria excursions.

High Hill Creek (PD-103) - Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although dissolved oxygen and pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

*A fish consumption advisory has been issued by the Department for mercury and includes **Black Creek** within this watershed (see advisory p.130).*

Groundwater Quality

<u>Well #</u>	<u>Class</u>	<u>Aquifer</u>	<u>Location</u>
AMB-032	GB	MIDDENDORF	DARLINGTON MAIN STREET

NPDES Program

Active NPDES Facilities

RECEIVING STREAM

FACILITY NAME

PERMITTED FLOW @ PIPE (MGD)

NPDES#

TYPE

COMMENT

BLACK CREEK
SONOCO PRODUCTS/HARTSVILLE
PIPE #: 001 FLOW: 3.6
PIPE #: 002 FLOW: 0.14
PIPE #: 003-006 FLOW: VARIES

SC0003042
MAJOR INDUSTRIAL

BLACK CREEK
CITY OF HARTSVILLE
PIPE #: 001 FLOW: 3.5
PIPE #: 001 FLOW: 4.50, 5.50 (PERMITTED)

SC0021580
MAJOR DOMESTIC

BLACK CREEK
CITY OF DARLINGTON/BLACK CREEK WWTP
PIPE #: 001 FLOW: 1.60

SC0039624
MAJOR DOMESTIC

BLACK CREEK
WELLMAN INC./PALMETTO PLT
PIPE #: 001 FLOW: 0.739
PIPE #: 02A FLOW: 0.001

SC0004162
MAJOR INDUSTRIAL

BLACK CREEK
PEE DEE REGIONAL WATER PLANT
PIPE #: 001 FLOW: M/R

SCG641020
MINOR DOMESTIC

BEAVERDAM CREEK TRIBUTARY
FLYING K FARMS MINE
PIPE #: 001 FLOW: M/R

SCG730987
MINOR INDUSTRIAL

LAKE ROBINSON/BLACK CREEK
PROGRESS ENERGY/HB ROBINSON
PIPES# 011 FLOW: 0.426

SC0002925
MAJOR INDUSTRIAL

HORSE CREEK BRITTS CONSTRUCTION/HWY 52 PIT PIPE #: 001 FLOW: M/R	SCG730557 MINOR INDUSTRIAL
BLACK CREEK TRIBUTARY L. DEAN WEAVER/DOVESVILLE MINE PIPE #: 001 FLOW: M/R	SCG730574 MINOR INDUSTRIAL
LUCAS CREEK NUCOR STEEL CORPORATION PIPE #: 001 FLOW: M/R	SC0048283 MINOR INDUSTRIAL
LUCAS CREEK NUCOR STEEL/BORROW PIT PIPE #: 001 FLOW: M/R	SCG730717 MINOR INDUSTRIAL
BELLYACHE CREEK MCCUTCHEON CONSTR./MCCUTCH & SCURRY PIPE #: 001 FLOW: M/R	SCG730527 MINOR INDUSTRIAL
SWIFT CREEK CITY OF DARLINGTON/NORTH MAIN ST WTP PIPE #: 001 FLOW: M/R	SCG641014 MINOR DOMESTIC
SWIFT CREEK DCW&SA/SWIFT CREEK WWTP PIPE #: 001 FLOW: 0.114	SC0043231 MINOR DOMESTIC
INDIAN CREEK TRIBUTARY CITY OF DARLINGTON/52 BYPASS WTP PIPE #: 001 FLOW: M/R	SCG645016 MINOR DOMESTIC
MCCALL BRANCH CITY OF FLORENCE/LUCAS ST. WTP PIPE #: 001 FLOW: M/R	SCG645024 MINOR DOMESTIC

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>SOLID WASTE LANDFILL NAME FACILITY TYPE</i>	<i>PERMIT # STATUS</i>
CITY OF FLORENCE MUNICIPAL	DWP-054 CLOSED
DARLINGTON CO. SW TRANSFER STATION MUNICIPAL	161001-6001 ACTIVE
DARLINGTON COUNTY C/C LANDFILL CONSTRUCTION	161001-1201 ACTIVE
SONOCO PRODUCTS CO. INDUSTRIAL	163315-1601 ACTIVE
DARLINGTON VENEER CO. INDUSTRIAL	163307-1601 ACTIVE
BROCKS C&C LANDFILL C&D	PROPOSED -----

WELLMAN PALMETTO PIT C&D	163329-1901 ACTIVE
HOWLE ENTERPRISES INC. COMPOSTING	162409-3001 INACTIVE
UNION CARBIDE-LINDE DIV. INDUSTRIAL	IWP-132 INACTIVE
HUMPHRAY COCKER SEED COMPANY INDUSTRIAL	----- INACTIVE
PEE DEE ENVIRONMENTAL SERVICES INDUSTRIAL	212426-1601 ACTIVE
PEE DEE ENVIRO SERV. C/C LANDFILL CONSTRUCTION	212426-1201 INACTIVE
NUCOR STEEL INDUSTRIAL	163324-1601, 163324-1602 ACTIVE

Land Application Sites

***LAND APPLICATION SYSTEM
FACILITY NAME***

***ND#
TYPE***

TILEFIELD ODOM'S MHP	ND0067997 DOMESTIC
TILEFIELD SWINKS MHP	ND0067636 DOMESTIC
SPRAYFIELD DCW&SA/SWIFT CREEK PLANT	ND0067962 DOMESTIC

Mining Activities

***MINING COMPANY
MINE NAME***

***PERMIT #
MINERAL***

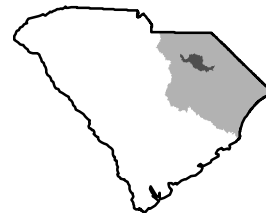
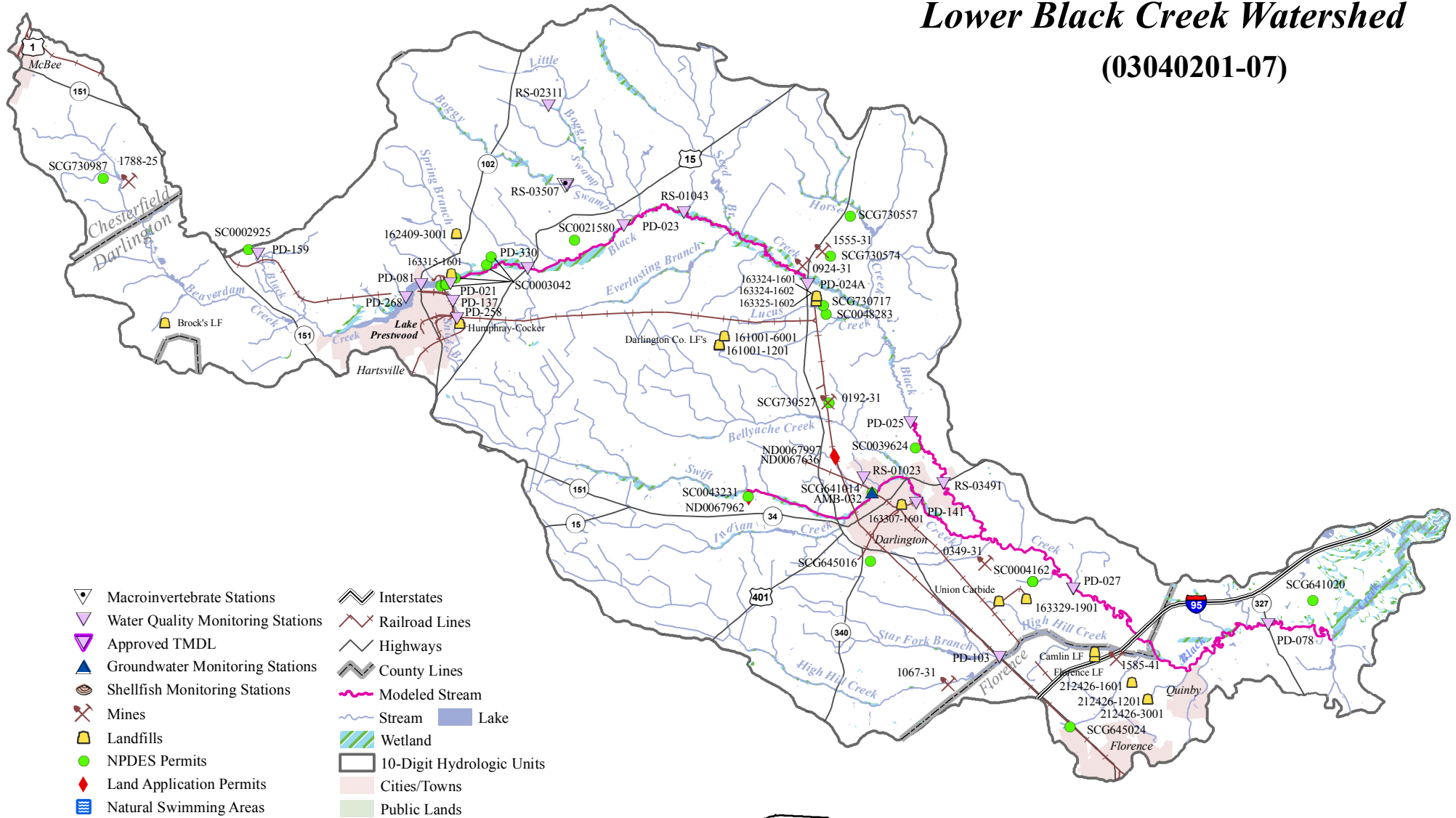
L.H. STOKES & SON, INC. HOFFMEYER PIT	1067-31 SAND/CLAY
L.H. STOKES & SON, INC. DOVESVILLE	0924-31 SAND
L.H. STOKES & SON, INC. MCLELLAN PIT	1585-41 SAND
L. DEAN WEAVER CONSTRUCTION CO. DOVESVILLE MINE	1555-31 SAND
INDUSTRIAL PAVING, INC. BRUNSEN MINE	0349-31 SAND/CLAY
MCCUTCHEON & SCURRY PIT #1	0192-31 SAND/CLAY
FLYING K FARMS FLYING K FARMS MINE	1788-25 SAND

Growth Potential

There is a high potential for growth in this watershed, which contains the Cities of Hartsville and Darlington, the Town of Dovesville, and portions of the City of Florence and the Towns of McBee and Clyde. The watershed has several major highways that serve as growth corridors. U.S. Hwy. 52 connects Florence to Darlington and has been widened to four lanes, with long term plans to continue the widening from Darlington to Cheraw. S.C. Hwy. 151, already widened to four lanes, is the main Florence to Charlotte travel corridor, and is becoming a magnet for commercial development. The segment of S.C. Hwy. 151 between Darlington and Hartsville is the primary growth corridor for Darlington County and should see additional commercial and industrial growth.

There is extensive water service coverage in the watershed coming from the Town of McBee, the Cities of Hartsville, Darlington, and Florence, and the Darlington County Water and Sewer Authority. Sewer service is currently limited to the three urban areas. Water and sewer system expansions in the watershed are highly likely. All three domestic systems have aggressive growth plans, especially the City of Florence which has recently constructed a new treatment facility and outfall to the Great Pee Dee River. The City of Florence also has tentative plans to develop a regional surface water treatment facility along the Pee Dee River to address severe groundwater supply problems being experienced by many Pee Dee municipalities.

Lower Black Creek Watershed (03040201-07)



0 0.5 1 2 3 4 Miles

