



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

APR 14 2016

Ms. Pam Behm
Modeling and Assessment Branch Chief
Division of Water Resources
North Carolina Department of Environment Quality
1611 Mail Service Center
Raleigh, North Carolina 27699-1611

Dear Ms. Behm:

The U.S. Environmental Protection Agency has completed its review of the 2015 North Carolina Addendum to the Low pH Total Maximum Daily Load (TMDL) for the Great Smoky Mountains National Park [Waterbody IDs 6-34-(15.5), 11-38-34-14, 11-29-22, 7-2-52-(1) and 11-38-32-9ut3; TMDL ID 65603] in Avery, Burke, Caldwell, Transylvania and Yancey Counties, North Carolina, that was submitted to the EPA on September 11, 2015. Based upon our review, we have determined that the statutory requirements of the Clean Water Act, Section 303(d) have been met and hereby approve this TMDL.

The enclosed Decision Document summarizes the elements of the review which were found to support the EPA's approval of the TMDL. If you have any questions or comments, please contact Ms. Marion Hopkins of my staff at (404) 562-9481.

Sincerely,

A handwritten signature in black ink, appearing to read "James D. Giattina".

James D. Giattina
Director
Water Protection Division

Enclosure

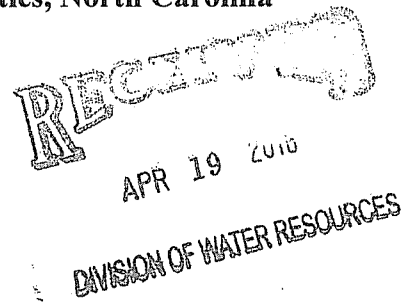
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DIVISION OF WATER RESOURCES

Revision of the North Carolina Addendum to the Low pH Total Maximum Daily Load for the Great Smoky Mountains National Park

Avery, Burke, Caldwell, Transylvania and Yancey Counties, North Carolina

TMDL ID# 65603

April 2016



A. TMDL Background:

In 2010, the Tennessee Department of Environment and Conservation developed a Total Daily Maximum Load (TMDL) for the Great Smoky Mountains National Park (GSMNP) to address low pH impairments. The TMDL (TMDL ID# 39438) was approved by EPA Region 4 in September, 2010. On August 12, 2012, EPA approved a TMDL (TMDL ID# 42373) submitted by the North Carolina Division of Water Resources (DWR) as an addendum to the GSMNP TMDL for two low pH waterbody impairments.

The current addendum, submitted to the EPA on September 11, 2015, includes five additional low pH impairments in mountain streams that drain high elevation undeveloped forested areas in western North Carolina. All were included on the 2014 303(d) list and are located in relatively close proximity to the GSMNP. From Table 1 of the addendum, the impacted waterbodies are:

Waterbody Name: Assessment Unit	Description	Water Classification	Miles
Davidson River: 6-34-(15.5)	From Avery Creek to Olin Corporation water supply dam	WS-V,B;Tr	2.7
Harper Creek: 11-38-34-14	From source to Wilson Creek	C;Tr,ORW	9.1
Shooks Creek: 11-29-22	From source to Linville River	C;Tr	2.9
South Toe River: 7-2-52-(1)	From source to U.S. Hwy. 19E	B;Tr,ORW	25.9
Unnamed Tributary (UT) to Frankum Creek: .11-38-32-9ut3	From source to Frankum Creek	C;HQW	0.9

The Source Assessment finds that the likely cause for lower pH in these waters is atmospheric acidity from sulfate and nitrate deposition that has over time reduced the acid neutralizing capacity (ANC) of these watersheds. Like the original GSMNP TMDL, this TMDL addendum uses ANC as a surrogate parameter with instream target values. Because there is no site specific ANC available for these streams, the default instream ANC target of 50 µeq/L is recommended for these streams.

B. Purpose of Proposed Revision:

The five additional impairments in this addendum were identified through data from the State's Ambient and Random Ambient Monitoring Systems and included on the 2014 303(d) list. The DWR Source Assessment determined that, similar to the existing GSMNP TMDLs, the likely cause for lower pH in these waters is atmospheric acidity.

C. Justification for Revision:

All of the addendum watersheds are located within 40 to 80 miles of the GSMNP. Based on this proximity, full implementation of the 2010 GSMNP TMDL would result in regional air quality improvement, and the ANC target of 50 $\mu\text{eq/L}$ in the addendum waters is expected to be achieved. Recent data show average annual 2007-2009 wet deposition of sulfate and inorganic nitrogen in the southeast was 43 and 23 percent lower respectively than in 1989-1991.

D. Revised TMDL Allocations:

Because there is no site specific ANC available for these streams, the default instream ANC target of 50 $\mu\text{eq/L}$ is recommended for these streams.

E. Other Considerations

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F. Public Participation:

A draft of this addendum to the GSMNP TMDL was publicly noticed through the DWR TMDL listserv, Water Resources Research Institute listserv, and the DWR Public Events Calendar from August 6, 2015 through September 8, 2015. The addendum was also available on DWR's website at <http://portal.ncdenr.org/web/wq/ps/mtu/tmdl/tmdls> during the comment period. No comments were received.