

STATE OF GEORGIA
TMDL IMPLEMENTATION PLAN
SAVANNAH RIVER BASIN
Revision 01; June 15, 2007

pH Exceedences

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Total Maximum Daily Load (TMDL) implementation plans are platforms for establishing a course of actions to restore the quality of impaired water bodies in a watershed. They are intended as a continuing process that may be revised as new conditions and information warrant. Procedures will be developed to track and evaluate the implementation of the management practices and activities identified in the plans. Once restored, appropriate management practices and activities will be continued to maintain the water bodies. The overall goal of the Plan is to define a set of actions that will help achieve water quality standards in the state of Georgia.

This implementation plan is applicable to the following segment in the Savannah River Basin:

Impaired Waterbody	Location	County	Miles/area Impacted
Ebenezer Creek	Long Bridge to Savannah River near Springfield	Effingham	20

INTRODUCTION

The TMDL process establishes the allowable pollutant loadings or other quantifiable parameters for a water body based on the relationship between pollutant sources and in-stream water quality conditions. This allows water quality-based controls to be developed to reduce pollution and restore and maintain water quality.

The United States Environmental Protection Agency (USEPA) placed a 20 mile segment of Ebenezer Creek described as Long Bridge to the Savannah River near Springfield on the State of Georgia's Section 303(d) list of impaired waters

due to pH exceedences. pH concentration (or hydrogen ion concentration) is a measure of acidity and/or alkalinity of a given solution. The measure of pH is on a number scale from 1 to 14 standard units (su), where a pH of 7su represents neutrality. pH concentrations lower than 7su represent increasing acidity, while pH concentrations of greater than 7su represent increasing alkalinity.

The fishing classification, as stated in Georgia's Rules and Regulations for Water Quality Control Chapter 391-3-3-(6)(c), is established to protect the "propagation of Fish, Shellfish, Game and Other Aquatic Life; secondary contact recreation in and on the water; or for any other use requiring water of a lower quality."

DISCUSSION OF POLLUTANT

One of the most significant environmental impacts of pH is the effect that it has on the solubility and thus the bioavailability of other substances. This process is important in surface waters. As the pH falls (solution becomes more acidic) many substances become more soluble and thus available for absorption.

POLLUTANT SOURCES

The potential sources of pH violation in this watershed are from both point sources and nonpoint sources. Title IV of the Clean Water Act (CWA) establishes the National Pollutant Discharges Elimination System (NPDES) permit program. The NPDES permit program requires permits for the discharge of "pollutants" from any "point source" into "waters of the United States" (40 CFR 122.1). There are two categories of NPDES permits: 1) municipal and industrial wastewater treatment facilities and 2) regulated storm water discharges. Industrial and municipal wastewater treatment facilities have NPDES permits with effluent limits. These permit limits are either based on federal and state effluent guidelines or on water quality standards.

There is one NPDES permitted Point Source, the City of Springfield (NPDES Permit # GA0020770), that discharges to Ebenezer Creek. The permit prescribes monthly discharge concentration pH limits of 6.0 to 9.0. A five-year compliance history shows no NPDES permit violations of the pH criterion by this Point Source.

The nonpoint sources of low pH in the watershed have not been determined. Because the predominate land use is agriculture and forest, agricultural erosion and runoff of the naturally low pH soils may be a potential source. Runoff of fertilizer, vegetative decay and rainwater are also potential sources of low pH. It is possible that the low pH is natural due to biological activity associated with woody wetlands.

PLAN FOR IMPLEMENTATION OF TMDL

A TMDL establishes the total pollutant load a water body can receive and still achieve water quality standards. Because pH is not a load, but rather a measure of acidity and/or alkalinity of a given solution, the TMDL uses an “other appropriate measure” (40 CFR Section 130.2(i)) rather than an actual mass-per-unit time measure. The State’s numeric pH criterion (6.0 to 8.5) is used as the TMDL target (other appropriate measure).

EPD will also encourage local governments and stakeholders to continue implementing management practices and activities that are already in place, including watershed assessments of pollutant sources and controls as well as water quality sampling and monitoring.

MONITORING PLAN

The GAEPD has adopted a basin approach to water quality management that divides Georgia’s fourteen major river basins into five groups. This approach provides for additional sampling work to be focused on one of the five basin groups each year and offers a five year planning and assessment cycle. The Savannah and Ogeechee River Basins were the subjects of focused monitoring in 2002 and will again receive focused monitoring in 2007.

EDUCATION/OUTREACH ACTIVITIES

The Environmental Protection Division will continue to provide guidance and education to the public on all water quality issues through outreach by the Watershed Protection Branch. Permitted discharges will be regulated through the NPDES permitting process. EPD is working with local governments, agricultural, and forestry agencies such as the Natural Resources Conservation Service, the Regional Development Centers, the Georgia Soil and Water Conservation Commission, and the Georgia Forestry Commission to foster the implementation of best management practices to address nonpoint sources. Public education efforts will be targeted to stakeholders to provide information regarding the use of best management practices to protect water quality.

REFERENCES

Georgia Rules and Regulations for Water Quality Control, Chapter 391-3-6-.03,
Water Use Classifications and Water Quality Standards,
Revised November 2005.

USEPA, 2005. Total Maximum Daily Load (TMDL) for pH Exceedences in
Ebenezer Creek, Georgia . March 2005.