STATE OF GEORGIA

REVISED TMDL IMPLEMENTATION PLAN FOR SPRING CREEK

FLINT RIVER BASIN

ZINC

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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.

INTRODUCTION

Georgia Environmental Protection Division (GAEPD) has identified two miles of Springs Creek, from a swampy point two miles upstream to its confluence with Lake Blackshear in Sumter County, as partially supporting its designated use due to the parameter zinc. The water use classification for Spring Creek is fishing. 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."

The Spring Creek listing for zinc resulted from water quality assessment data collected in 1992 and 1993. This segment of Spring Creek was first listed in the Georgia 1994 303(d) list. The Lake Blackshear Clean Lakes Report gave total recoverable zinc values and also provided TSS and hardness concentrations for Spring Creek. This information was use to calculate the critical conditions used to develop the TMDL.

The validity of this historical data is suspect due to the potential for contamination during sampling. In November 2000 and June 2001, water quality data was collected in Lake Blackshear at Midlake and the Dam Forebay using clean sampling techniques. The sample results showed no violation of the zinc standards and resulted in the delisting of the Lake Blackshear listed segments.

Spring Creek, an embayment to Lake Blackshear, was not sampled and therefore was not reassessed.

DISCUSSION OF POLLUTANT

Zinc is a common metallic element with a variety of uses. It is used as a coating to rustproof steel, in dry batteries, and to make alloys such as brass and bronze. Zinc compounds are widely used to make paint, rubber, dyes and wood preservatives. Excessive amounts of zinc have been shown to be deleterious to health. Natural sources of zinc include the erosion and weathering of metal-rich rocks and soils, and the decomposition of plants and animals that contain trace amounts of metals. Road construction, tire residues, and exhaust fumes are also sources of zinc. Atmospheric deposition of zinc in the watershed could also add a quantifiable load of zinc, but it is not well understood at this time.

POLLUTANT SOURCES

The potential sources of zinc 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 are currently no industrial or municipal NPDES permitted discharges to Spring Creek.

Storm water discharges associated with industrial activities are currently covered under a General Storm Water NPDES Permit. This permit requires visual monitoring of storm water discharges, site inspections, implementation of Best Management Practices (BMPs), and record keeping. There are numerous industrial and construction sites in this watershed. It is unknown at this time whether these facilities are contributing zinc to the watershed.

Some storm water runoff is covered under the NPDES Permit Program. It is considered a diffused source of pollution. Unlike other NPDES permits that establish end-of-pipe limits, storm water NPDES permits establish controls. Currently, regulated storm water discharges include those associated with industrial activities, including construction sites five acres or greater, and large and medium municipal separate storm sewer systems (MS4s).

Storm water discharges from MS4s are very diverse in pollutant loadings and frequency of discharge. All cities and counties within Georgia with a population greater than 100,000 at the time of the 1990 Census are permitted for storm water discharge. This includes 60 permittees, 45 of which are located in the greater Atlanta metro area. MS4 permits prohibit non-storm water discharges in the storm sewer systems, and require controls to reduce the discharge of pollutants to the maximum extent practicable, including the use of management practices, control techniques and systems, and design and engineering methods. It is unknown whether MS4s are contributing zinc to the watershed.

There are no permitted landfills in the Spring Creek watershed. It is unknown whether any nonpoint sources potentially cause or contribute to excursions of the water quality standard for zinc. There is no data available that indicated any specific nonpoint source of zinc.

PLAN FOR TMDL IMPLEMENTATION

Through its NPDES permitting process, GAEPD will determine whether future permitted dischargers to the Spring Creek watershed have a reasonable potential of discharging zinc levels equal to or greater than the allocated load. The results of this reasonable potential analysis will determine the specific type of requirements in an individual facility's NPDES permit. If a permit were to be issued in the future, EPD will use its EPA-approved 2001 NPDES Reasonable Potential Procedures to determine whether monitoring requirements or effluent limitations are necessary. If effluent limitations or monitoring requirements are determined to be necessary for future facilities, it is recommended that concentration limits or concentration monitoring requirements be imposed in addition to any loading limits or monitoring requirements.

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 Chattahoochee and Flint River Basins were the subjects of focused monitoring in 2000 and will again receive focused monitoring in 2005.

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 Water 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 Developments 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.

REFERENCE

Georgia Rules and Regulations for Water Quality Control, Chapter 391-3-6-.03, Water Use Classifications and Water Quality Standards, Revised February 2004.

GAEPD, 2003. Total Maximum Daily Load Evaluation for Zinc in the Flint River Basin, The Flint River (Upstream of Hartsfield Airport), Mud Creek, and Spring Creek, January 2003.