

**Coosa River Modeling Project**  
**2006 Field Study Plan**  
**Module 5**  
**Wastewater Treatment Facility Sampling & Data Collection**

**Georgia Department of Natural Resources**  
**Environmental Protection Division**  
**Watershed Protection Branch**  
**Watershed Planning & Monitoring Program**  
**4220 International Parkway**  
**Suite 101**  
**Atlanta, Georgia 30354**

## **Introduction**

The primary objective of this module is to collect effluent composite samples from State-permitted National Pollutant Discharge Elimination System (NPDES) facilities of interest within the study area. Major and minor dischargers on the study mainstem and tributaries have been selected for sampling and are listed in Table 5-1. The population of dischargers includes both municipal and industrial facilities. Sampling activities will be conducted in conjunction with Permit Compliance System (PCS) reportable Compliance Sampling Inspections (CSIs) at all sites. Personnel of the Facilities Monitoring Unit (FMU) will perform the inspections and effluent sampling. Samples collected will be "split" with the permittees' laboratories for comparison of analytical results. The inspections and sampling (including repeat sampling of select facilities) will be performed during the intensive project study period of mid-June through mid-October 2006.

A secondary objective of this module is retrieval and compilation of daily effluent field data results from facility Discharge Monitoring Reports (DMRs) and Operations Monitoring Reports (OMRs). Individual laboratory results for effluent parameter monitoring will also be assembled and tabulated (rather than the monthly average values normally reported to the Environmental Protection Division). Where possible, this information will be obtained from the permittees via spreadsheet or other electronic format. In all other cases the necessary records will be reviewed and data required will be entered and maintained in the Waterhed Protection Branch's Water Resources Data-Base (WRDB).

Similarly, daily raw water supply intake data for the mainstem cities Calhoun, Cartersville, and Rome will be retrieved and summarized.

## **Study Area**

The 2006 project will be performed in the Coosa River Basin in northwest Georgia. Administratively, the entire area of concern is within the Environmental Protection Division's Mountain District. The Mountain District office is located in Cartersville.

NPDES facilities within the Coosa River Basin have been selected for sampling through a screening process that considered design flow, existing effluent sampling data and potential for impact on the river model and associated Total Maximum Daily Loads (TMDLs). Many of the dischargers were sampled during calendar year 2001 as part of the River Basin Management Plan (RBMP) sampling initiative. Several of the Publicly Owned Treatment Works (POTWs) have been sampled since that time in conjunction with annual Industrial User (IU) inspections. Table 5-1 listed the facilities that have been selected for sampling inspection during the intensive sampling period.

**Table 5-1 Sampling Inspections for Coosa River Project  
 Intensive Sampling Period  
 Calendar 2006**

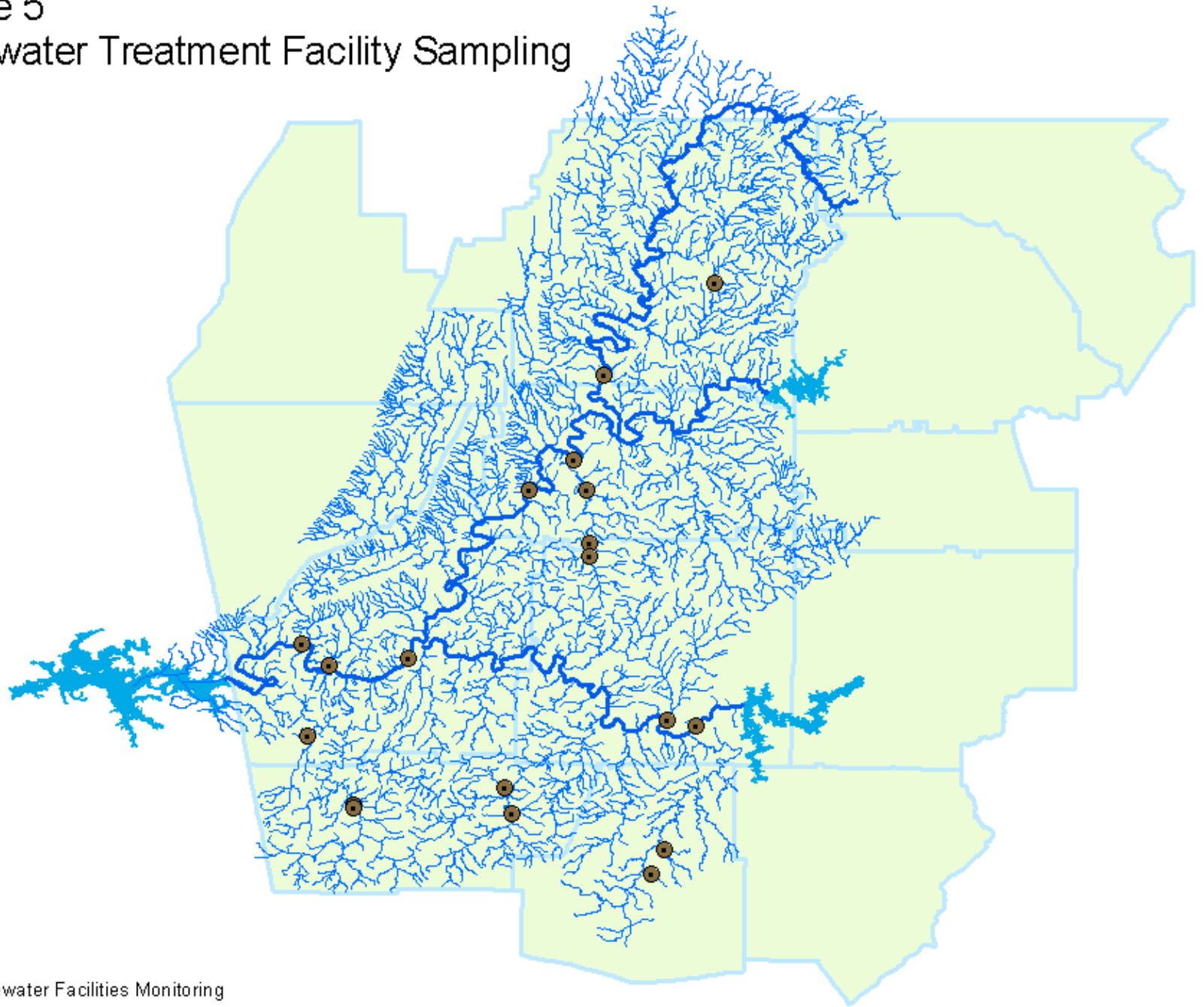
<b>Dischargers</b>	<b>Receiving Stream</b>	<b>NPDES Permit Number</b>	<b>Major</b>	<b>Minor</b>
<b>Conasauga Sub-Basin</b>				
Dow Chemical Company	Conasauga River	GA0000426		X
Chatsworth WPCP	Holly Creek	GA0032492	X	
<b>Oostanaula Sub-Basin</b>				
Calhoun WPCP	Oostanaula River	GA0030333	X	
Cumberland Academy	Oostanaula River	GA0035947		X
Adairsville-North WPCP	Oothkalooga Creek	GA0046035	X	
Adairsville-South WPCP	Oothkalooga Creek	GA0032832		X
OMNOVA Solutions, Inc.	Oothkalooga Creek	GA0000329		X
<b>Etowah Sub-Basin</b>				
Bartow County-Southeast WPCP	Etowah River	GA0037664		X
Cartersville WPCP	Etowah River	GA0024091	X	
Dallas-West WPCP	Weaver Creek	GA0026026	X	
Dallas-North WPCP	Lawrence Creek	GA0026034		X
Rockmart WPCP	Euharlee Creek	GA0026042	X	
Polk County-Aragon WPCP	Euharlee Creek	GA0026182		X
<b>Upper Coosa Sub-Basin</b>				
Rome-Blacks Bluff WPCP	Coosa River	GA0024112	X	
Rome-Coosa WPCP	Coosa River	GA0024341	X	
Inland Paperboard	Coosa River	GA0001104	X	
Cedartown WPCP	Cedar Creek	GA0024074	X	
GEO Specialty Chemicals	Cedar Creek	GA0001708		X
Cave Springs WPCP	Little Cedar Creek	GA0025721		X

**Sampling Methodology**

FMU personnel will collect twenty-four hour effluent composite samples that will be analyzed for the parameters listed in Table 5-2.

# Module 5

## Wastewater Treatment Facility Sampling



### Legend

- Wastewater Facilities Monitoring

**Table 5-2 Chemical Analysis Parameters**

<b>Parameter</b>
BOD <sub>5</sub>
CBOD <sub>5</sub>
Total Suspended Solids
Total Organic Carbon
Total Kjeldahl Nitrogen *
Ammonia-Nitrogen *
Nitrates + Nitrites *
Total Phosphorous *
Orthophosphate *
Specific Conductivity

\* Nutrient parameter suite

Effluent composite samples will be collected using automatic sampling equipment (ISCO Model 3700). One or more subsample aliquots will be collected per hour for the twenty-four hour compositing period. Subsamples will be manually flow-proportioned when the effluent flow rate varies by more than fifteen percent during the compositing interval. Nutrient samples will be preserved on-site and all samples will be cooled during the compositing process, storage and transportation to the laboratory.

Field determinations will be made of the parameters listed in Table 5-3.

**Table 5-3 Field Parameters**

<b>Parameter</b>
Dissolved Oxygen
pH
Temperature
Specific Conductivity

Data on instantaneous flow rates and cumulative (totalized) flow will be retrieved or generated as a part of normal inspection procedures.

### **Sampling Quality Control**

Sampling procedures, sampling equipment preparation, and sample preservation and handling will be performed in accordance with the guidance contained in the following documents:

*Water Quality-Quality Assurance Manual*, June 1999, Georgia Department of Natural Resources, Environmental Protection Division, Water Protection Branch, Atlanta, Georgia, 30354.

*Environmental Investigations Standard Operating Procedures and Quality Assurance Manual*, March 1997, United States Environmental Protection Agency, Region 4, Athens, Georgia, 30605.

*Title 40, Code of Federal Regulations, Part 136.3*, (latest revision), United States Federal Register, Office of the Federal Register, National Archives and Records Administration, Washington, D.C., 20001.

All methods, protocols, and procedures regarding sampling locations, representative sampling and accurate effluent characterization will apply in the same manner as for routine compliance inspection sampling. Facility representatives will be consulted regarding normal transient phenomena expected during the compositing period and efforts will be made to reflect these events in the composite samples. The inspectors will note nonstandard discharges such as variations in turbidity, gross solids losses or unusual coloration as well as the time intervals corresponding to the events. Factors contributing to significant variations in effluent quality during the compositing interval will be determined where possible.

### **Split Sample Data Comparability**

Composite samples will be split with the facilities' laboratories for comparison of analytical results. The permittees will be required to submit test results for those parameters included on their NPDES permits. Facility results will be compared with data generated for EPD samples as part of the usual Compliance Sampling Inspection report preparation process. Comparisons are based on a statistical tool known as Percent Relative Standard Deviation (%RSD). The Facilities Monitoring Unit has developed Acceptability Standards for many parameters based on hundreds of sets of split samples taken throughout the State. Acceptability Standards are specific for each parameter and are further selective within limited concentration ranges.

At the conclusion of the 2006 study, all split sampling data comparisons will be summarized in a separate report.