



Project Summary

Environmental Methods Testing Site Users' Guide

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The Environmental Methods Testing Site (EMTS) Project is being conducted by the Environmental Protection Agency with the cooperation of the state of Georgia, the state of Tennessee, Hamilton County, Tennessee, and the city of Chattanooga. The concept is to establish one well-characterized site, designated as the Chattanooga Metropolitan Statistical Area, at which to conduct a series of studies designed to improve environmental monitoring methods and methods for assessing human exposure to toxic substances in the environment. The project, planned to span a 5- to 15-year period, is being conducted in support of the Toxic Substances Control Act of 1976.

The Chattanooga area is well suited as a site to conduct human exposure methodology studies. Site users have the support of local government and of EMTS Project participants who provide a management team, information gathering services, computerized data management and analysis, and quality assurance assistance. The Chattanooga area provides a hospitable climate, a population and geographical size allowing statistically valid sampling of subpopulations, isolation from other cities, a diverse industrial base, a large existing data base, and modern technical and logistical support facilities.

This Project Summary was developed by EPA's Environmental Monitoring Systems Laboratory, Las Vegas, NV, to announce key findings of the research project that is fully documented in a separate report of the same title (see Project Report ordering information at back).

Introduction

This document is written for managers and principal investigators who may be contemplating future field studies. It provides potential site users with the information necessary to conduct their studies at the EMTS.

The purpose of the Environmental Methods Testing Site (EMTS) Project is to advance the state of the art of assessing human exposure to environmental pollutants. The Environmental Protection Agency (EPA) has a need to develop and improve methods for assessing human exposure to toxic substances to support regulations resulting from the Toxic Substances Act of 1976. Having the responsibility for administering the Act, the EPA Office of Toxic Substances (OTS) has asked the EPA Office of Research and Development (ORD) for technical assistance. The Office of Research and Development is responsible for developing and validating monitoring methods and for providing quality assurance support for the Environmental Protection Agency. The Environmental Methods Testing Site Project is being conducted by the Office of Research and Development as a means to provide the research needed by EPA on human exposure methods development.

The objective of the Environmental Methods Testing Site Project is to provide a well-characterized site in which to develop, test, and compare multimedia exposure monitoring methodology. The emphasis is on characterizing one site in detail so that any number of exposure assessment studies can be conducted more economically and quickly than they could be conducted at separate sites.

The approach to accomplishing the purpose and objective of the EMTS Pro-

ject is to set up a single well-characterized site, then invite principal investigators to conduct relevant field studies. Categories of needed studies include but are not limited to the following:

- Testing the efficiency and bias of questionnaires used to canvass human populations for environmental exposure information
- Testing field performance of environmental and human measurement methods
- Evaluation of techniques for multimedia data analysis
- Validation of models
- Evaluation of relevant quality assurance procedures

In order to fulfill its purpose and objective, the EMTS Project needs principal investigators to use the site. The nature of the EMTS Project is to provide a site and a network of political and technical support. It is expected that EPA will conduct most of the studies done at the EMTS, but all other Federal agencies, universities, state and local governments, and public, private, and international organizations are encouraged to participate in the opportunities offered by the EMTS. A principal investigator will qualify as an EMTS user when his study proposal is approved by the EMTS Steering Committee.

The EMTS Project is being conducted by the EPA Office of Research and Development for the EPA Office of Toxic Substances. Project activities are carried out by the ORD Environmental Monitoring Systems Laboratories and their respective contractors in Research Triangle Park, North Carolina, and Las Vegas, Nevada.

After careful consideration of a set of site selection criteria, the EMTS was chosen to be the six-county Chattanooga, TN-GA, Metropolitan Statistical Area. Priority of consideration was first given to local political support, then climate, population, geography, isolation, diversity of industry, availability of data, and finally, local support facilities. Figure 1 is a map showing the location and extent of the study area.

The state of Tennessee, Hamilton County, and the city of Chattanooga are active participants in the project. The state of Georgia has chosen to be represented by the EPA Region 4 office in Atlanta and has given its tacit approval and support of the project.

Local interest in the EMTS Project is high. When the EMTS Steering Committee, which is the management body of the project, was formed, two advisory

subcommittees were incorporated to insure the rapid flow of information between Project planners and local interest groups. This arrangement has worked well. Advisory committee members and their constituents have a chance to review planning documents and voice their concerns or suggestions before a problem evolves. The advisory committees are shown all news releases concerning the EMTS Project and its related studies before they are given to the press.

All funding for management of the EMTS comes through the Office of Research and Development but is allocated through the Pesticides and Toxic Substances Research Committee in support of OTS program objectives.

Two EPA Environmental Monitoring Systems Laboratories and their contractors carry out the technical tasks of the project. In particular, the major task for Research Triangle Park is data management, and that for Las Vegas is site characterization. Characterization requires that all known data relevant to the site be found and evaluated. The product of these efforts is the EMTS data base which requires considerable data management to prepare it in a form useful for evaluation. These data can be analyzed either by a geographic information system in Las Vegas or by statistical packages in Research Triangle Park.

The EMTS Users' Guide discusses the advantages to principal investigators of conducting studies at the EMTS and includes a description of the data available from the EMTS data base. Following that is a description of the site and the support facilities available at the site. The users' guide continues with the procedures and requirements to initiate, conduct, and document a study at the EMTS. Finally, procedures are given for those users who wish to contribute their data to the EMTS data base.

Summary

The Environmental Methods Testing Site (EMTS) is the Chattanooga, TN-GA, Metropolitan Statistical Area as defined by the Bureau of the Census. The site consists of Hamilton, Marion, and Sequatchie counties in Tennessee; and Catoosa, Dade, and Walker counties in Georgia. The Chattanooga area was selected by the Environmental Protection Agency in cooperation with the state and local governments by using a set of comprehensive selection criteria. The EMTS is being used to conduct a series of field studies in a common, well-charac-

terized location which is considered advantageous and cost effective. The purpose is to advance the state of knowledge about methods to measure human exposure to environmental pollutants.

Advantages to principal investigators who choose to use the EMTS are as follows:

- Political support from state and local governments and an established management team through EPA laboratories and their contractors
- A common data base that has been collected by EPA and its participating contractors, the state of Tennessee, the Chattanooga-Hamilton County Air Pollution Control Bureau, and the Tennessee Valley Authority
- A quality assurance program being administered by the Environmental Monitoring Systems Laboratory at Las Vegas, Nevada, and its contractor, the Environmental Research Center of the University of Nevada-Las Vegas.
- A data management program being administered by the Environmental Monitoring Systems Laboratory at Research Triangle Park, North Carolina, and its contractor, Northrop Services, Incorporated
- Computer processing for statistical analysis of data collected at the EMTS on the EPA IBM system at the National Computer Center
- Spatial analysis of new and old data with a geographic information system on a VAX 785 at the Environmental Monitoring Systems Laboratory at Las Vegas, Nevada, operated by its contractor, Lockheed Engineering and Management Services Company
- Because of the benefits listed above, principal investigators who use the EMTS can expect to conduct their studies at a lower cost than if they went to another city

A very large data base has been compiled for the EMTS to be accessed by prospective users of the site. Users can determine what data are available, what the quality is, and where and when the data were collected.

To gain access to the EMTS and its supporting programs, prospective users must contact the Project Coordinator, Robert Jungers, EPA, Research Triangle Park, telephone: (919) 541-7870 or FTS 629-7870. Users must demonstrate that they have funding for their proposed field work and must submit a study plan through the Project Coordinator for approval by the EMTS Steering Committee.

Environmental Methods Testing Site, Chattanooga SMSA

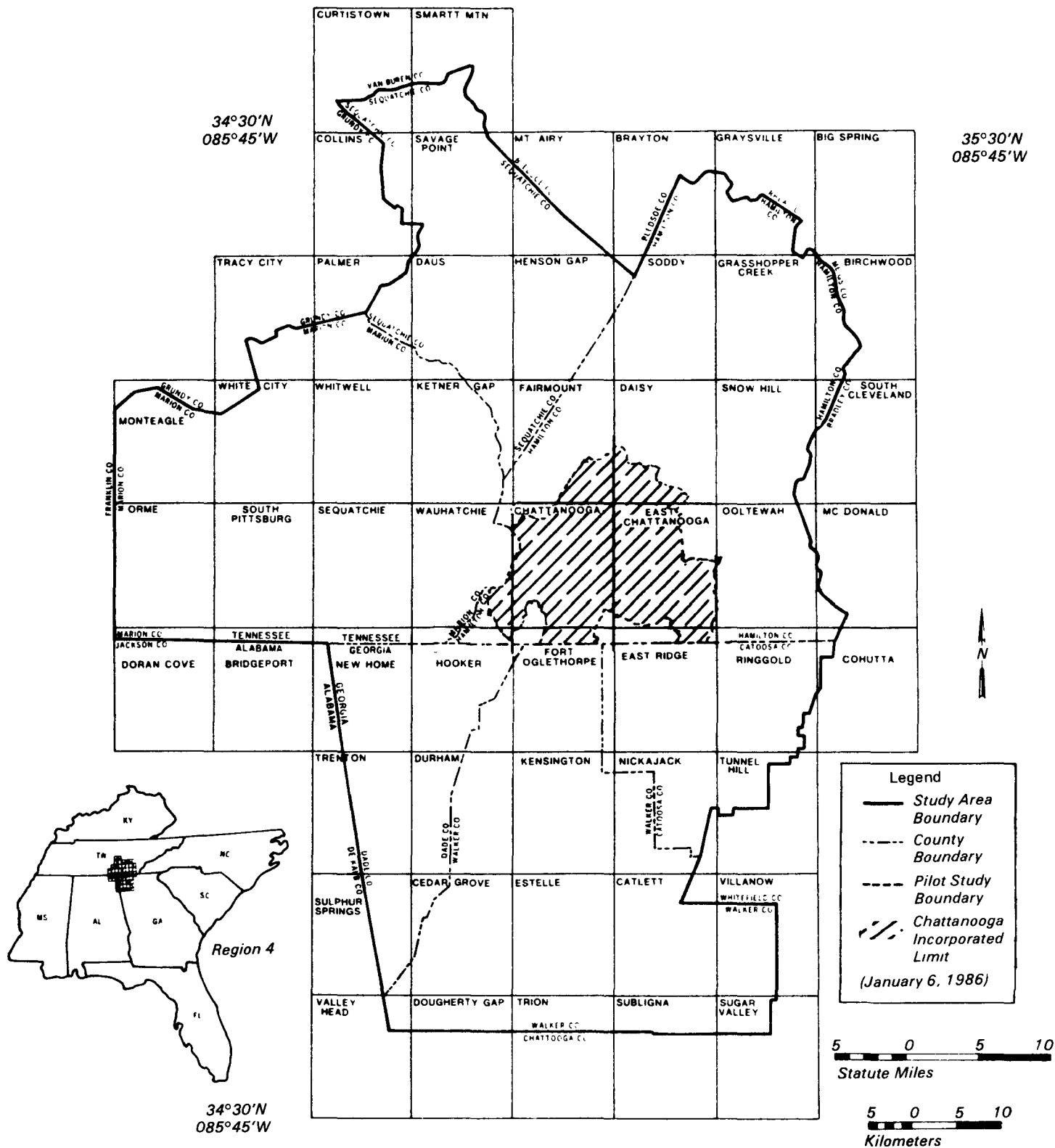


Figure 1. Map of study area.

Approved studies will be conducted in cooperation with the EMTS Steering Committee which will facilitate communication among the various EMTS participants. Field and systems audits may be performed by a designated quality assurance agent for all studies. The Chattanooga-Hamilton County Air Pollution Control Bureau will provide public relations services for all studies.

Principal investigators must provide monthly progress reports to the Steering Committee during the course of a study, and a final report and executive summary at the conclusion of a study. Final reports

will be subject to peer review. Users are encouraged to publish their results.

When and if newly collected data are validated, principal investigators are encouraged to contribute their data to the EMTS Data Base so that other users of the EMTS can benefit from their work.

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The complete report entitled "Environmental Methods Testing Site Users' Guide," (Order No. PB 87-202 412/AS; Cost: \$18.95, subject to change) will be available only from:

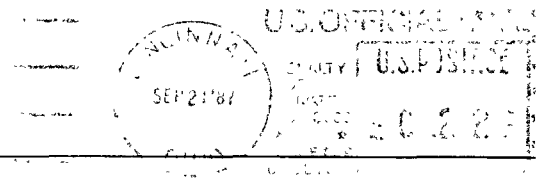
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