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Project Summary

Environmental Methods Testing Site Project: Project Management Plan

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The Environmental Methods Testing Site 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 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.

This management plan describes the objectives of the project and the interactions among the various participants that are necessary to complete the task of site selection, site characterization, and conducting field studies. Emphasis is given to site characterization which includes inventorying data relevant to the Chattanooga area, designing a data base, and implementing the use of a geographic information system to analyze the data. The geographic information system will be used to analyze existing data to infer possible relationships among the elements of exposure mechanisms, and it will be used to plan studies needed to validate such relationships.

Documentation of many of the technical details related to this project are reserved for future documents — the Data Management Procedures Plan, the Quality Assurance Plan, and the User's Guide — all listed as milestones in this management plan. Some of the details presently known are attached to this document as appendices.

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

The Environmental Protection Agency (EPA) has a need to develop and to improve methods to assess human exposures to toxic substances and 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 Acid Deposition, Environmental Monitoring, and Quality Assurance (ODEMQA) is that part of the Office of Research and Development which is responsible for monitoring methods development and validation and quality assurance support for the Environmental Protection Agency. The Environmental Methods Testing Site Project (EMTS) is being conducted by the Office of Research and Development through the ODEMQA laboratories for the Office of Toxic Substances. EMTS is meant to provide needed research in the area of human exposure methods development for the EPA.

Procedure

Field tests of monitoring equipment, survey techniques, or models for assessing exposure require that large amounts of data be collected usually at one or

more selected sites. Much of the resources for such projects go into the preliminary work of selecting and characterizing a study site before the actual study can begin. The concept of the Environmental Monitoring Testing Site (EMTS) is to perform the preliminary work once and then to proceed with any number of projects at the same, well-characterized site. Intrinsic to the concept is the establishment of a single testing site with the required supporting adminstrative structure, management team, information gathering services, computerized data management, quality assurance procedures, and assured cooperation of local authorities. This unique approach will provide a system of funding mechanisms, support agreements, and approvals. The EMTS will be a uniquely characterized city where a very large data base will be automated into a computerized, interactive, geographic information system. The only steps necessary to initiate field studies will be approval of the study plan and quality assurance plan by an appropriate review authority. The EMTS structure offers a considerable savings in costs and time to investigators contemplating field studies of exposure assessment methods.

Criteria used in identifying a suitable site for the EMTS included but were not limited to the following:

- Assured permission and cooperation of local authorities.
- Moderate climate enabling year round work.
- A human population on the order of 450,000 to 1,100,000.
- Relative isolation from other major pollution sources.
- Existence of a variety of pollution sources.
- Availability of existing relevant data on parameters.
- Availability of supporting facilities.

After considerable study of potential sites, the Chattanooga, TN-GA, Standard Metropolitan Statistical Area (SMSA) was chosen as the best site, based on criteria partially outlined above. The Chattanooga SMSA includes Hamilton, Marion, and Sequatchie Counties in Tennessee, and Catoosa, Dade, and Walker Counties in Georgia. A report produced by the Environmental Monitoring Systems Laboratory-Las Vegas in February 1986, entitled The Site Characteristics Document, describes the selection process and the study area in more detail.

Investigators from the EPA program offices, other Federal agencies, state and local departments, and international organizations interested in conducting studies to develop human exposure methods will be invited to use the site. Proposals will be reviewed by a steering committee consisting of members from the Office of Toxic Substances (OTS), the Office of Research and Development (ORD), the State of Tennessee, Hamilton County, and the City of Chattanooga.

Some of the studies scheduled for implementation in 1986 are as follows:

HEAL (Human Exposure Assessment Location) — World Health Organization and EPA/ORD

National Human Monitoring Program — EPA Office of Toxic Substances

NHATS (National Human Adipose Tissue Survey)

NBN (National Blood Network)

Discussion

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 in separate cities.

Discussion

In the remainder of this plan, a group of selected definitions are presented so that readers will have a common basis for understanding the terms employed. Management and funding information are summarized. Milestones are defined. Procedures for approving studies to be conducted at the EMTS are specified. Data management and analysis procedures are presented with special attention accorded to the planned geographic information system (GIS). Finally, a summary is provided of scheduled reports.

The EMTS Project Management Plan documents the membership of the EMTS Steering Committee and its functions. The Steering Committee provides a mechanism for formal and direct communication among the major participants in the EMTS Project. While traditional lines of management will be retained for funding, delegation of authorities, contracting, and reporting procedures, the network formed by the Steering Committee streamlines operations of the EMTS Project. The Steering Committee also provides a mechanism for direct communications with members of the community primarily through two citizens' advisory committees and the public relations staff of the Chattanooga-Hamilton County Air Pollution Control Bureau.

The Project Management Plan also describes the requirement for building a large EMTS data base from disparate sources of retrospective data and documents the participants involved. An EMTS Inventory file tracks the progress of the data base. Site users can query the Inventory file before going to the field as an aide to designing studies. The intention to use a geographic information system as the primary analytical tool is discussed, and the software and equipment are described.

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The complete report, entitled "Environmental Methods Testing Site Project: Project Management Plan," (Order No. PB 87-145 827/AS; Cost: $13.95, subject to change) will be available only from:
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