

# The Children's Total Exposure to Persistent Pesticides and Other Persistent Organic Pollutants (CTEPP) Study

## Processing Completed Data Forms

Battelle  
Columbus, OH 43201  
Contract No. 68-D-99-011

**Standard Operating Procedure**

**CTEPP-SOP-4.10**

**Title:** Processing Completed Data Forms

**Source:** Battelle

U.S. Environmental Protection Agency  
Office of Research and Development  
Human Exposure & Atmospheric Sciences Division  
Exposure Measurements & Analysis Branch

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STANDARD OPERATING PROCEDURE (SOP)  
FOR PROCESSING COMPLETED DATA FORMS

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## **1.0 Scope and Applicability**

This standard operating procedure (SOP) describes the methods for processing completed data forms.

## **2.0 Summary of Method**

The methods for processing completed data forms are summarized in this SOP. Key components of the SOP include (1) field editing, (2) data form Chain-of-Custody (CoC), (3) data processing verification, (4) coding, (5) data entry, (6) programming checks, (7) preparation of code book and computer file documentation, and (8) delivery of data files and documentation.

The key personnel on the field sampling team will perform the first level of review, ensuring that all data items have been completed. All the completed data forms will be delivered to the data processing staff in the Battelle Durham North Carolina (NC) Office. CoC Records will be used to track the status of the data forms. Questionnaire data will be checked against data dictionaries that are designed to draw out inconsistencies from the information provided by the respondents. When necessary, respondents will be contacted to explain questionnaire data discrepancies. The data processing staff will check all collected field data (e.g., questionnaires, data forms, etc.) before they are entered into the database or shipped to the laboratory for analysis. All paper records and data forms will be checked for completeness and missing information. All open-ended responses on the data forms will be coded and a code book will be developed. After the visual checks, the data will be entered into a computer database. In order to produce data of maximum quality, all data will be verified, that is, keyed twice. Two people will enter the data into two separate files. A computer program will be developed specifically for checking the accuracy of the entered data. It will cross check every record in the two databases. Any discrepancies will be detected by the verification program and will be corrected.

Once the data are entered and verified, a more extensive and complex editing check will follow. A computer editing program will be developed to perform range checks within items; consistency checks among data items, and checks for properly followed routing patterns. The senior project personnel will specify edits performed and review them after completion. The resulting edit report will document the current data values and verify that the records have completed all edit checks. The files will then be ready for data analysis.

Data from the database will not be released to the public and interested parties until the quality of all data has been verified; the data have been stripped of personal identifiers; and the data have been approved by EPA for public release.

### **3.0 Definition**

Not Applicable.

### **4.0 Cautions**

Not applicable.

### **5.0 Responsibilities**

5.1 The CTEPP Field Team Leader (FTL) will oversee the data processing operation and ensure that the standard operating procedures are followed by all project staff.

5.2 The data preparation staff at the Battelle Durham NC Office will be responsible for conducting the data processing tasks.

### **6.0 Apparatus and Materials**

6.1 Materials

6.1.1 Completed data collection forms

6.1.2 Coding, editing and data entry instructions

6.1.3 Problem resolution logs

6.1.4 Code book

6.1.5 Data cleaning specifications

6.1.6 Data forms tracking log

### **7.0 Procedure**

7.1 Field Editing

7.1.1 The field staff will review all completed data collection forms at the sampling site immediately after the data forms are completed. They will check for any missing data items and incomplete or questionable data.

7.1.2 If missing data or questionable data are identified, the field staff will clarify the data with the participant and collect the missing information before they leave the sampling site.

## 7.2 Data Form CoC

7.2.1 All the completed data forms will be delivered or shipped to the data processing staff in the Battelle NC Durham Office. The CoC Records will be used to track the status of the data forms.

7.2.2 The data processing staff will create a data log to record the receipt of the data forms.

## 7.3 Data Processing Verification

7.3.1 All data forms will be checked for completeness and missing information. Data processing staff will review the data forms for any missing data and incomplete or questionable data.

7.3.2 If missing data or questionable data are identified, the data processing staff will contact the participant to collect the missing information or clarify the questionable data.

## 7.4 Coding

7.4.1 Selected open-ended data items (responses) will be coded as required by EPA. A data dictionary will be developed per requirements.

## 7.5 Data Entry

7.5.1 A computer data entry program will be developed by the programming staff.

7.5.2 All data will be verified, that is, keyed twice. Two staff members will enter the data into two separate files.

## 7.6 Programming Checks

7.6.1 A computer program will be developed specifically for checking the accuracy of the entered data. It will cross check every record in the two databases.

- 7.6.2 If discrepancies are found, the data processing staff will correct the errors.
- 7.6.3 A computer editing program will be developed to perform range checks within data items, consistency checks among data items, and checks for properly followed routing patterns.
- 7.6.4 The Battelle Durham Office QA officer (data preparation manager) will oversee the edit checks and review the results after completion. The resulting edit report will document all original data values and any changes made during electronic editing. When all edits are completed and all problems resolved to the satisfaction of the Task Order Leader (TOL) and the EPA Task Order Project Officer (TOPO), the data will be considered clean and ready for analysis.
- 7.7 Preparation of Code Book and Computer File Documentation
  - 7.7.1 Once the quality of all data has been verified, the data will be prepared by the programming staff in the format specified by the Battelle TOL and EPA TOPO.
  - 7.7.2 The data processing and programming staff will prepare the code book and data file documentation (i.e., data dictionary).
- 7.8 Delivery of Data Files and Documentation
  - 7.8.1 Data files and documentation will be delivered to the TOL in the requested format.

## **8.0 Records**

The original records will be stored in a secured file room until the conclusion of the study and will be archived in a secure room for three years after completion of the study. Field data will be entered into a computer database. Electronic files will be stored in the CTEPP Data folders and archived in a CD ROM disk after the project is completed. All electronic files will be protected by passwords. Only authorized project personnel will be allowed to access the files.

## **9.0 Quality Control and Quality Assurance**

Detailed documentation will be maintained for all data processing work performed. All the data processing work will be verifiable. The QA Officer, or designee, FTL, and TOL will oversee the data processing work and ensure the SOPs are followed by all project staff. All staff handling the data forms and processing the data are trained in quality

control and quality assurance practices. The various levels of visual and electronic editing help ensure quality data by subjecting the data to the scrutiny of several individuals as well as systematic computer checks.

## **10.0 Reference**

Not applicable.