



# **US Environmental Protection Agency Office of Pesticide Programs**

**Office of Pesticide Programs  
Microbiology Laboratory  
Environmental Science Center, Ft. Meade, MD**

**Standard Operating Procedure for  
Use and Maintenance of Laboratory Notebooks and  
Project Binders**

**SOP Number: ADM-05-06**

**Date Revised: 10-24-23**

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Title	Use and Maintenance of Laboratory Notebooks and Project Binders
Revisions Made	<ul style="list-style-type: none"><li>• Minor editorial changes for clarification purposes.</li><li>• Responsibilities previously on the analyst were shifted to become the responsibility of the QAO.</li><li>• Updated Attachment 1 to remove a section deemed irrelevant.</li></ul>

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Title	Use and Maintenance of Laboratory Notebooks and Project Binders
Scope	This standard operating procedure is for laboratory data recorded on standardized test forms and in laboratory notebooks.
Application	To provide guidance on the use and maintenance of laboratory notebooks and project binders for laboratory activities.

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TABLE OF CONTENTS

<u>Contents</u>	<u>Page Number</u>
1. DEFINITIONS	3
2. HEALTH AND SAFETY	3
3. PERSONNEL QUALIFICATIONS AND TRAINING	3
4. INSTRUMENT CALIBRATION	3
5. SAMPLE HANDLING AND STORAGE	3
6. QUALITY CONTROL	3
7. INTERFERENCES	3
8. NON-CONFORMING DATA	3
9. DATA MANAGEMENT	3
10. CAUTIONS	4
11. SPECIAL APPARATUS AND MATERIALS	4
12. PROCEDURE AND ANALYSIS	4
13. DATA ANALYSIS/CALCULATIONS	7
14. FORMS AND DATA SHEETS	7
15. REFERENCES	7

<b>1. Definitions</b>	<ol style="list-style-type: none"> <li>1. Laboratory notebook = a bound collection of serially numbered pages used to record the planning and progress of a scientific investigation.</li> <li>2. Project binder = a loose-leaf collection of dated hand-written and/or computer-generated documents and forms, tables, notes and data.</li> <li>3. Other abbreviations/definitions are provided in the text.</li> </ol>
<b>2. Health and Safety</b>	Not applicable.
<b>3. Personnel Qualifications and Training</b>	Refer to SOP ADM-04, OPP Microbiology Laboratory Training.
<b>4. Instrument Calibration</b>	Not applicable.
<b>5. Sample Handling and Storage</b>	Not applicable.
<b>6. Quality Control</b>	<ol style="list-style-type: none"> <li>1. The OPP Microbiology Laboratory conforms to 40 CFR Part 160, Good Laboratory Practice Standards (GLP). Appropriate quality control measures are integrated into each SOP.</li> <li>2. For quality control purposes, the required information is documented in the laboratory notebook or on the appropriate record form(s) (see section 14).</li> </ol>
<b>7. Interferences</b>	Adequate cross-referencing between a notebook and binder or between two analysts' notebooks or binders is important. Lack of cross-referencing could make interpretation of the information difficult.
<b>8. Non-conforming Data</b>	Document any non-conformances and follow up with appropriate corrective action(s). Procedures are consistent with SOP ADM-07, Non-Conformance Reports.
<b>9. Data Management</b>	<ol style="list-style-type: none"> <li>1. Active notebooks and binders should be kept by the analyst in a secure location. After completion of a project, notebooks and project binders are subject to review by the Quality Assurance Unit (QAU), and final documents are archived in file cabinets in the room D217. Only authorized personnel have access to the archive room D217.</li> <li>2. Archived data is subject to OPP's official retention schedule contained in SOP ADM-03, Records and Archives.</li> </ol>
<b>10. Cautions</b>	None

<b>11. Special Apparatus and Materials</b>	None
<b>12. Procedure and Analysis</b>	<ol style="list-style-type: none"> <li>1. Laboratory notebooks, project binders, their contents, and any associated documentation are the property of the United States Environmental Protection Agency.</li> <li>2. These materials should be kept in a safe location while the project is ongoing. As projects are completed, the materials are archived.</li> <li>3. The QAU provides each lab notebook with a notebook ID (analyst initials and a number) when it is issued.</li> <li>4. A log of all notebooks is maintained on G:\MLB (see section 14). Binders are prepared for research projects listed in the master schedule (SOP QA-04; Master Schedule) and are maintained in their corresponding folder on G:\MLB\RESEARCH PROTOCOLS\Research Summary Memos.</li> <li>5. The QAU populates this notebook log upon notebook issuance. Binders related to research projects are maintained by lead analysts and scanned and filed in research protocols (summary reports) when the project is complete.</li> <li>6. The notebook log and master schedule are reviewed by the QAU or designee on a regular basis to ensure that these documents accurately reflect the status of notebooks and binders used in laboratory.</li> </ol>
<b>12.1 Purpose</b>	<ol style="list-style-type: none"> <li>a. The laboratory notebook and/or project binder is a permanent record of a researcher's activities.           <ol style="list-style-type: none"> <li>i. The main purpose of maintaining a laboratory notebook and/or project binder is to preserve experimental plans, study design or protocol, procedures that were followed, observations, results, conclusions, and recommendations. The information that is documented must be done in a way that another scientist can replicate the study based on the information presented in the notebook or binder.</li> <li>ii. Quality control activities and practices related to equipment maintenance and calibrations are recorded on the appropriate forms and maintained in logbooks as required under other laboratory Standard Operating Procedures (EQ and QC series). It is not necessary to also</li> </ol> </li> </ol>

	<p>record the data in the laboratory notebook though the activities should be referred to and cross-referenced in the laboratory notebook or binder data sheets.</p> <p>b. A laboratory notebook may cover more than one study.</p>
<p>12.2 Format</p>	<p>a. <u>Title Page or Cover Sheet</u>: On the title page or cover sheet, record analyst name, the laboratory name (OPP Microbiology Laboratory Branch, Environmental Science Center, Ft. Meade, MD), the date the notebook was started and ended, the notebook ID, and the project title, study protocol or research protocol, for which the notebook is used. A notebook can be used for one or several studies.</p> <p>b. <u>Table of Contents</u>: Table of contents is optional. For ease of use and retrieval of unique studies in a binder, each analyst must separate studies using binder tabs. If a table of contents is generated in a notebook, reserve several pages following the title page for recording a running table of contents. Record the Study Protocol or Research Protocol title and project identification number followed by the pages used to document the study.</p> <p>c. <u>Experimental descriptions</u>: Separate experiments using clearly stated descriptions and/or dates.</p> <p>d. <u>Page numbering</u>: Serial page numbering is recommended for notebooks and project binders. Additionally, pages should have at a minimum the date and initials of analysts conducting the work. For notebooks, date and initial all study information and data generated at the end of each day of data collection.</p> <p><u>NOTE</u>: Pages in laboratory notebooks and/or project binders should not be skipped without proper documentation (see 12.3q) or discarded.</p>
<p>12.3 General Guidelines</p>	<p>The following are general guidelines for documenting work associated with planning, protocols, lab work, recording study data, observations, and any additional information required to recreate the day's work.</p> <p>a. Document the daily plan of the experiment before initiating lab work. Date and initial each daily entry. Include a short description of the purpose of the investigation. If the plan is in the form of a research protocol, affix it in the notebook. Document all changes appropriately with initials and date.</p>

	<ul style="list-style-type: none"><li>b. Plan how to document the experiment in the notebook or binder prior to making any entries. Leave room for tables, observations, graphs, spreadsheets, and statistical analysis. Writing should be legible, grammatically correct, and factually complete. Do not use the notebook for scratch work or personal information.</li><li>c. The laboratory notebook and/or project binder should be available in the lab while conducting a study or research.</li><li>d. Control the location of and access to the laboratory notebook and/or project binder. Secure them when not in use.</li><li>e. All entries should be made in permanent ink and should be complete. Anyone assisting should initial and date entries. Documentation should indicate who did what step or portion of the experiment and when.</li><li>f. Make notes and observations clear, concise, yet detailed, and complete. Unusual or unique observations that could lead to further experimentation should be documented into the notebook.</li><li>g. Provide full detail of all experimental procedures and conditions. Any SOPs or portions of SOPs that are being used should be referenced (by name, version date, and section, if applicable) and any deviations should be documented.</li><li>h. Graphs, drawings, or printouts should be carefully affixed in the notebook using as permanent a method as possible (glue, staples). Reference any affixed material on the bound page; sign/initial and date over the interface.</li><li>i. Document the program name and version number used for graphing programs, spreadsheets, or statistical software.</li><li>j. Use clear and descriptive headings for each section.</li><li>k. Ensure the contents of the laboratory notebook and/or project binder are peer-reviewed during the course of a study. Have the peer-reviewer date and sign each portion that is reviewed in the notebooks and document the review appropriately for binders.</li><li>l. Define all abbreviations, code names, or product codes. Abbreviations need only be defined when used for the first time.</li><li>m. Draw a line through all errors followed by a date, initials, and a</li></ul>
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	<p>brief explanation for the correction (codes may be used for common error types such as EE for entry error and EEO for entry error omission). Do not erase or use white out; the original entry should be visible.</p> <ul style="list-style-type: none"> <li>n. To correct a large section, block out with one diagonal line from corner to corner followed by a date, initials, and short explanation for the strike out. The original uncorrected section should still be visible.</li> <li>o. For more than one page, indicate the continuation at the bottom of the first and any subsequent pages, along with initials and date.</li> <li>p. If a long-term experiment is interrupted by other daily entries, indicate that the experiment is continued on the appropriate page number, along with initials and date.</li> <li>q. If a page is skipped, cross out the whole page, and initial and date the line.</li> <li>r. Do not write near the binding as this area may not photocopy well.</li> <li>s. Number laboratory notebooks sequentially; label project binders by protocol number. Cross-reference multiple notebooks, when necessary.</li> </ul>
<b>13. Data Analysis/ Calculations</b>	None
<b>14. Forms and Data Sheets</b>	<p>1. Test sheets. Test sheets are stored separately from the SOP under the following file name:</p> <p style="text-align: center;">Notebook Log <span style="float: right;">ADM-05-06_F1.docx</span></p>
<b>15. References</b>	<ol style="list-style-type: none"> <li>1. Writing the Laboratory Notebook, H.M. Kanare, American Chemical Society, 1985.</li> <li>2. US EPA Good Laboratory Practice Standards, Title 40 Code of Federal Regulations (CFR) Part 160.</li> </ol>