



STANDARD OPERATING PROCEDURES

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1.0 OBJECTIVE

The objective of this Standard Operating Procedure (SOP) is to define the procedures required for preparing and maintaining documentation that provides the details of field sampling activities. The sample documentation discussed in this procedure includes Site Logbooks, Field Data Worksheets, Analytical Logbooks, Labels, Chain of Custody records and custody seals.

A Quality Assurance Project Plan (QAPP) in Uniform Federal Policy (UFP) format describing the project objectives must be prepared prior to deploying for a sampling event. The sampler needs to ensure that the methods used are adequate to satisfy the data quality objectives listed in the QAPP for a particular site.

The procedures in this SOP may be varied or changed as required, dependent on site conditions, equipment limitations or other procedural limitations. In all instances, the procedures employed must be documented on a Field Change Form and attached to the QAPP. These changes must be documented in the final deliverable.

2.0 APPLICABILITY

This SOP is applicable to all field activities which involve the collection of samples and/or the generation of environmental measurements and data associated with sample collection. It is applicable to both traditional (handwritten) and electronic records as those acquired through equipment that denotes sample locations (e.g. global positioning system [GPS]) or equipment that measures conditions at the time of sample collection (e.g. data logger).

Scientific recordkeeping accurately records and preserves data, provides a usable and comprehensive reference for clients and coworkers, enables continuation or replication of work and preserves all data describing the work for scientific and legal purposes.

3.0 DESCRIPTION

3.1 General

Accurate sample documentation is essential for proper site evaluation. A clear traceable paper trail must follow each sample from its point of origin to the final client deliverable. It is important that specific procedures be adopted so that the desired degree of accuracy and completeness is achieved.

All sample documents must be completed accurately and completely. Each line, table or checkbox present on any field datasheet must be completed. If there is some reason why certain areas of portions of a field datasheet are not used, field personnel are required to cross out those sections and initial and date. Any hardcopy corrections or revisions must be made by crossing out the incorrect entry and initialing and dating the error.

3.2 Sample/Measurement Documentation

Field sample documentation must be sufficient so that an accurate account of field operations can be reconstructed in the writer's absence. Site activity may be documented in a site logbook or on field datasheets. There is the potential, especially on Superfund sites, for these records to be used as legal evidence. All site logbooks, field datasheets, data acquired electronically by U.S. EPA Environmental Response Team [ERT] and ERT contractor personnel and Scribe databases are official records. Upon completion of the sampling event, all sample information that can be imported must also be entered into the site-specific Scribe database.



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3.2.1 Site Logbook

The site logbook is essentially a descriptive notebook detailing site activities and observations. All entries should be dated and signed by the individual(s) making the entries. Site logbooks should contain at a minimum, the following information:

- Site name and location on inside and outside cover
- Name of person to whom the logbook was assigned
- Date and location of field work
- Times (military times preferred, or reference AM or PM)
- Names and addresses of field contacts
- Site sketches and/or photographic references
- Weather conditions
- Sample descriptions, locations, times taken, identification numbers
- Chain of Custody information, shipping paper identification number, recipient address and phone number, etc.
- Field observations and discussion
- Field measurements (i.e. pH, temperature, surface water flow rates, etc.)
- Instructions issued by the Work Assignment Manager
- Field activities by all contractor personnel on site

Entries may be made in site logbooks by any ERT or ERT contractor personnel on site and should detail the activities of all personnel involved in the field operations. Each entry should be signed by the person making the entry and should relate to previous entries or have sufficient background detail. The sequence of site activities should be clear to a reader who was not at the site. Various types of logbooks available are shown in Figure 1, Appendix A.

When a site logbook is completed and no longer needed for site documentation, or after a project is finished, the site logbook must be returned to the ERT contractor's Central Files for archiving. If the site logbook is transmitted to ERT, documentation of the transmittal and a copy of the notes from the logbook must be prepared and maintained in the Central Files.

3.2.2 Field Data Worksheets

Field data worksheets, specific to a sampling or measurement/monitoring task, may be used to record all information pertinent to sampling efforts. Field data worksheets are pre-printed to document specific data related to sample collection or field measurement/monitoring data. Required fields typically include Site Name, Project Number (Work Assignment Number [#]), Sampler(s), ERT Work Assignment Manager (WAM), the ERT contractor's Task Leader, Date, Sample #, sample location information, collection information, measurement/monitoring data including type of device used for collection/measurement activities, any calibrations performed, flow rate, etc. and analytical requirements. Examples of Field Data Worksheets include: Air Sampling Worksheets, SUMMA Sampling Worksheets, Boring Logs, Slug Test Data Sheets, etc. All sample data documented on Field Data Worksheets will be transferred to the site-specific Scribe database, as fields allow. Field Datasheets/Worksheets will be archived in the ERT contractor's Central Files and are typically appended to the final client deliverable.



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Examples of field datasheets/worksheets can be found in Figures 2 through 5, Appendix A.

3.3 Analytical Documentation

Analytical data, including sample analysis or field analytical measurements, must be documented so that the sequence of laboratory activities will be clear to a reader who was not involved in the analysis. These measurements are recorded in an analytical logbook. Analytical logbooks will be issued for, but are not limited to: documenting analysis by a particular lab (stationary, mobile, Trace Atmospheric Gas Analyzer [TAGA]) or instrument; recording sample preparation and extraction procedures; recording temperature readings, and; documenting bench-scale and treatability studies.

Entries must detail the analytical activities of laboratory personnel. Each entry must be signed and dated by the analyst making the entry and must relate to previous entries or have sufficient background detail. Upon completion of an analytical logbook, the logbook must be returned to the ERT contractor's Quality Assurance/Quality Control (QA/QC) Officer for archival or remain in the laboratory for reference.

3.4 Sample Labels

Sample labels are attached to environmental samples and are used to document sample information including the sample location, sample number, sample date/time, sample volume (air samples) and analyses. Sample labels may be generated by Scribe or pre-numbered sample labels may be used. If pre-numbered labels are used, the Scribe database must be updated to include all sample information. If a Contract Laboratory Program (CLP) laboratory will be analyzing the sample(s), the sample label(s) must include unique preassigned CLP number(s). ERT SOP, *Scribe Use in Field Operations* should be consulted for more detail on the use of Scribe.

3.4.1 Scribe Generated Sample Labels

Sample labels are generated by the Scribe software for inclusion on the sample containers. The label contents can be tailored to suit the needs of the project and the laboratory where the samples will be analyzed. Scribe generated labels (Figures 6 and 7, Appendix A) are used for all types of samples.

If duplicates or blanks are collected at a sampling location, the sample sets must be treated as being unique from the original sample and labeled with different and unique sample identification numbers. The Scribe database should be used to document sample duplicates and link to the original sample. When collecting samples for parameters which require extra volume for matrix spike/matrix spike duplicate (MS/MSD) analysis, the original sample container(s) and the MS/MSD containers are labeled with the same sample identification number. Required volumes for MS/MSD analysis for typical parameters are specified in each site specific QAPP.

3.4.2 Pre-Numbered Sample Labels

Logistically, there may be circumstances where Scribe cannot be used to effectively generate labels to fulfill the demands of a project. This may be due to lack of computing or printing resources, the need to pre-label sample containers (i.e. tracking high and low volume activity based sampling [ABS] cassettes), or time-sensitive constraints. At the



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discretion of the Task Leader, pre-numbered sample labels may be used to meet sample documentation needs.

The pre-numbered sample label for SUMMA canister sampling (Figure 3, Appendix A) consists of three parts. The largest part includes the project name, the contract number, the sample identification number, and space for the following information: the site name, sample volume, date, time, requested analysis, and remarks. Other parts include two additional sample labels with only the sample identification number.

When a sample is collected, the largest part of the sample label is completed and affixed to the sample container in the manner described by the appropriate ERT air sampling SOP. The two remaining sample number labels can be used to label additional sample containers comprising that sample or to identify sample number on the Field Data Sheet or Logbook.

Although pre-numbered labels may be used to meet project demands, all data must be entered into the Scribe database.

3.5 Chain of Custody

A Chain of Custody (COC) record (Figure 9, Appendix A) must be maintained from the time a sample is collected to its final deposition so that the entire path and life of a sample can be tracked. Chain of Custody (COC) is a legal term that refers to the ability to guarantee the identity and the integrity of the sample (or data) from collection through reporting of the test results. A sample is under custody if: (1) it is in a person's actual possession; (2) it is in your view, after being in your possession; or (3) it was in your possession and is now custody sealed; or (4) it is stored in a controlled area.

In the case of litigation, the COC is evaluated to ensure that sample integrity was maintained from the time of sample collection to completion of analysis. The COC should be generated by the TL or their designee using Scribe software. Scribe is required for generating COC records. Refer to ERT SOP, *Chain of Custody Procedures*. In instances where a Scribe COC can't be generated in the field due situations such as emergency response, working remotely without power or computer problems, a preprinted blank COC record may be used as a last resort (Figure 10, Appendix A).

3.6 Custody Seals

Custody Seals (Figure 11, Appendix A) demonstrate that a sample container has not been opened or tampered with during transport or storage. Two seals should be affixed in such a manner that the shipping container cannot be opened without breaking the seal. The person in direct possession of the samples shall sign and date the seal at the time of its application. In some circumstances, usually for CLP procedures, it may also require that each individual sample container be sealed with a custody seal.

4.0 RESPONSIBILITIES

4.1 ERT Work Assignment Manager

The ERT Work Assignment Manager (WAM) is responsible for providing technical expertise and technical direction to the contractor, preparing task orders/work assignments, reviewing deliverables, interacting with the Regional customers and monitoring the financial and administrative management of the project.



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4.2 ERT Quality Coordinator

The ERT Quality Coordinator provides QA oversight for all projects and implements/maintains the ERT Quality Assurance Program.

4.3 ERT Contractor Task Leaders and Field Staff

The ERT contractor TLs and field staff are responsible for preparing and maintaining sample documentation in accordance with this SOP.

4.4 ERT Contractor Management

The ERT contractor's management are responsible for ensuring implementation of the procedures outlined in this SOP.

4.5 ERT Contractor QA/QC Officer

The ERT contractor's QA/QC Officer is responsible for ensuring compliance with this SOP by auditing reports prepared by contractor personnel and notifying contractor management personnel on an annual basis to review and revise this SOP.

5.0 REFERENCES

U.S. EPA, *for Documenting Environmental Information in Logbooks*, accessed at <https://www.epa.gov/quality/procedure-documenting-environmental-information-logbooks> (July 2020).

6.0 APPENDIX

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FIGURE 2. Air Sampling Worksheet



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EPA/Environmental Response Team
Scientific, Engineering Response and Analytical Services Contract
Air Sampling Work Sheet
Leidos, Edison, NJ
U.S. EPA Contract No. EP-W-09-031



Site: _____

WA#: _____

Sampler: _____

U.S. EPA/ERT WAM _____

Date: _____

SERAS Task Leader: _____

Sample #					
Location					
Pump #					
Media					
Analysis/Method					
Rotameter/ Calibration Device					
Time/Counter (Start)					
Time/Counter (Stop)					
Total Time					
Pump Fault	Y / N	Y / N	Y / N	Y / N	Y / N
Flow Rate (Start)					
Flow Rate (End)					
Flow Rate Average					
Sample Volume					
MET Station on Site?:	Y / N				



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FIGURE 3. SUMMA Sampling Work Sheet



EPA/Environmental Response Team
Scientific, Engineering, Response and Analytical Services
Leidos, Inc., Edison, NJ
U.S. EPA Contract No. EP-W-09-031

Page ___ of ___



Air Sampling Work Sheet - SUMMA

Site: _____

WA# _____

Sampler: _____

U.S. EPA/ERT WAM: _____

Date: _____

SERAS Task Leader: _____

Sample #					
Location					
Sub-Location					
Summa #					
Orifice ID					
Start Pressure					
NIST Gauge S/N					
Flow Rate (Start)					
Flow meter					
Analysis/Method					
Time/Counter (Start)					
Time/Counter (Stop)					
Total Time					
End Pressure					
NIST Gauge S/N					
MET Station on Site?: Y / N					



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FIGURE 6. Example Scribe-Generated Sample Labels

Sample # B8B51
Date: 5/17/2010 Time: 15:50
Analyses: CLP TCL Pesticide/PCBs Preservation: 4 C
MS/MSD: N

Sample # B8B51
Date: 5/17/2010 Time: 15:50
Analyses: CLP TCL Volatiles Preservation: 4 C
MS/MSD: N

Sample # B8B51
Date: 5/17/2010 Time: 15:50
Analyses: CLP TCL Volatiles Preservation: 4 C
MS/MSD: N

Sample # B8B51
Date: 5/17/2010 Time: 15:50
Analyses: CLP TCL Volatiles Preservation: 4 C
MS/MSD: N

Sample # B8B51
Date: 5/17/2010 Time: 15:50
Analyses: CLP % Moisture Preservation: 4 C
MS/MSD: N

Sample # MB8B51
Date: 5/17/2010 Time: 15:50
Analyses: CLP TAL Total Metals Preservation: 4 C
MS/MSD: N

Sample # B8B51
Date: 5/17/2010 Time: 15:50
Analyses: CLP TCL Semivolatiles Preservation: 4 C
MS/MSD: N

Sample # B8B52
Date: 5/17/2010 Time: 16:45
Analyses: CLP TCL Volatiles Preservation: 4 C
MS/MSD: N

Sample # B8B52
Date: 5/17/2010 Time: 16:45
Analyses: CLP TCL Volatiles Preservation: 4 C
MS/MSD: N

Sample # B8B52
Date: 5/17/2010 Time: 16:45
Analyses: CLP TCL Volatiles Preservation: 4 C
MS/MSD: N



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FIGURE 7. Example Scribe-Generated Sample Labels

Sample # 059-2001
Date: 5/17/2010 Time: 15:50
Location: GCMW-43 Sub Location 5
Analyses: CLP TCL Pesticide/PCBs Preservation: 4 C
MS/MSD: N

Sample # 059-2001
Date: 5/17/2010 Time: 15:50
Location: GCMW-43 Sub Location 5
Analyses: CLP TCL Volatiles Preservation: 4 C
MS/MSD: N

Sample # 059-2001
Date: 5/17/2010 Time: 15:50
Location: GCMW-43 Sub Location 5
Analyses: CLP TCL Volatiles Preservation: 4 C
MS/MSD: N

Sample # 059-2001
Date: 5/17/2010 Time: 15:50
Location: GCMW-43 Sub Location 5
Analyses: CLP TCL Volatiles Preservation: 4 C
MS/MSD: N

Sample # 059-2001
Date: 5/17/2010 Time: 15:50
Location: GCMW-43 Sub Location 5
Analyses: CLP % Moisture Preservation: 4 C
MS/MSD: N

Sample # 059-2001
Date: 5/17/2010 Time: 15:50
Location: GCMW-43 Sub Location 5
Analyses: CLP TAL Total Metals Preservation: 4 C
MS/MSD: N

Sample # 059-2001
Date: 5/17/2010 Time: 15:50
Location: GCMW-43 Sub Location 5
Analyses: CLP TCL Semivolatiles Preservation: 4 C
MS/MSD: N

Sample # 059-2002
Date: 5/17/2010 Time: 16:45
Location: GCMW-43 Sub Location 7
Analyses: CLP TCL Volatiles Preservation: 4 C
MS/MSD: N

Sample # 059-2002
Date: 5/17/2010 Time: 16:45
Location: GCMW-43 Sub Location 7
Analyses: CLP TCL Volatiles Preservation: 4 C
MS/MSD: N

Sample # 059-2002
Date: 5/17/2010 Time: 16:45
Location: GCMW-43 Sub Location 7
Analyses: CLP TCL Volatiles Preservation: 4 C
MS/MSD: N



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FIGURE 8. Pre-Numbered SUMMA Label

i

SERAS, EDISON NJ
 (732) 321-4200 **SAMPLE NO. 00351**
EPA CONTRACT EP-W-09-031

SITE NAME	DATE
VOL OF AIR	TIME
ANALYSIS REQUEST:	REMARKS:

SERAS, EDISON NJ
 (732) 321-4200 **SAMPLE NO. 00352**
EPA CONTRACT EP-W-09-031

SITE NAME	DATE
VOL OF AIR	TIME
ANALYSIS REQUEST:	REMARKS:

00351

00351

00352

00352

SERAS, EDISON NJ
 (732) 321-4200 **SAMPLE NO. 00353**
EPA CONTRACT EP-W-09-031

SITE NAME	DATE
VOL OF AIR	TIME
ANALYSIS REQUEST:	REMARKS:

SERAS, EDISON NJ
 (732) 321-4200 **SAMPLE NO. 00354**
EPA CONTRACT EP-W-09-031

SITE NAME	DATE
VOL OF AIR	TIME
ANALYSIS REQUEST:	REMARKS:

00353

00353

00354

00354

SERAS, EDISON NJ
 (732) 321-4200 **SAMPLE NO. 00355**
EPA CONTRACT EP-W-09-031

SITE NAME	DATE
VOL OF AIR	TIME
ANALYSIS REQUEST:	REMARKS:

SERAS, EDISON NJ
 (732) 321-4200 **SAMPLE NO. 00356**
EPA CONTRACT EP-W-09-031

SITE NAME	DATE
VOL OF AIR	TIME
ANALYSIS REQUEST:	REMARKS:

00355

00355

00356

00356

SERAS, EDISON NJ
 (732) 321-4200 **SAMPLE NO. 00357**
EPA CONTRACT EP-W-09-031

SITE NAME	DATE
VOL OF AIR	TIME
ANALYSIS REQUEST:	REMARKS:

SERAS, EDISON NJ
 (732) 321-4200 **SAMPLE NO. 00358**
EPA CONTRACT EP-W-09-031

SITE NAME	DATE
VOL OF AIR	TIME
ANALYSIS REQUEST:	REMARKS:

00357

00357

00358

00358

SERAS, EDISON NJ
 (732) 321-4200 **SAMPLE NO. 00359**
EPA CONTRACT EP-W-09-031

SITE NAME	DATE
VOL OF AIR	TIME
ANALYSIS REQUEST:	REMARKS:

SERAS, EDISON NJ
 (732) 321-4200 **SAMPLE NO. 00360**
EPA CONTRACT EP-W-09-031

SITE NAME	DATE
VOL OF AIR	TIME
ANALYSIS REQUEST:	REMARKS:

00359

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FIGURE 11. Custody Seals

SERAS, Edison, NJ US EPA Contract No. EP-W-09-031 (732) 321-4200		_____ DATE
CUSTODY SEAL		_____ SIGNATURE
SERAS, Edison, NJ US EPA Contract No. EP-W-09-031 (732) 321-4200		_____ DATE
CUSTODY SEAL		_____ SIGNATURE
SERAS, Edison, NJ US EPA Contract No. EP-W-09-031 (732) 321-4200		_____ DATE
CUSTODY SEAL		_____ SIGNATURE
SERAS, Edison, NJ US EPA Contract No. EP-W-09-031 (732) 321-4200		_____ DATE
CUSTODY SEAL		_____ SIGNATURE
SERAS, Edison, NJ US EPA Contract No. EP-W-09-031 (732) 321-4200		_____ DATE
CUSTODY SEAL		_____ SIGNATURE
SERAS, Edison, NJ US EPA Contract No. EP-W-09-031 (732) 321-4200		_____ DATE
CUSTODY SEAL		_____ SIGNATURE