

APPENDIX D-17
Preparation Procedure for EDTA in Soil: AP-0057

“Sample Chain of Custody”

1.0 PURPOSE

This procedure provides instructions for sample custody from collection to final disposition.

2.0 SCOPE

This procedure applies to all samples collected under a sampling plan which requires documentation of sample custody.

3.0 SUMMARY

Requirements for documentation of sample collection and sample custody are specified.

4.0 REFERENCES

- 4.1 U. S. Environmental Protection Agency, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, 3rd Edition, Most Recent Update (September 1994)
- 4.2 "Preparation Aids for the Development of Category II Quality Assurance Project Plans," EPA/600/8-91/004, February 1991, Guy F. Simes, Risk Reduction Engineering Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, OH 45268
- 4.3 "Preparation Aids for the Development of Category III Quality Assurance Project Plans," EPA/600/8-91/005, February 1991, Guy F. Simes, Risk Reduction Engineering Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, OH 45268
- 4.4 "Sample Receipt, Log-in, and Data Handling", GLP-0016, Tennessee Valley Authority, Analytical Laboratory of Environmental Applications, Muscle Shoals, AL.

“Sample Chain of Custody”

5.0 RESPONSIBILITIES

- 5.1 The laboratory team leader shall ensure that this procedure is followed.
- 5.2 The sampler shall follow this procedure to ensure sample integrity in the field.
- 5.3 The person transporting the samples shall follow the procedure to ensure sample integrity in transit.
- 5.4 The person receiving the samples shall follow this procedure to ensure sample integrity upon receipt and immediately following.
- 5.5 Laboratory analysts shall follow this procedure during sample analysis.

6.0 REQUIREMENTS

6.1 Prerequisites

- 6.1.1 Sample containers shall be cleaned to specifications of the sampling plan, or in their absence, to good commercial practice.
- 6.1.2 Sample containers shall have preservative added before sampling as required by the sampling plan.

6.2 Limitations and Actions

- 6.2.1 If the sampling organization has its own sampling procedure, sample custody procedure, labels, or custody forms, they may be substituted for the contents of this procedure as permitted by the sampling plan.
- 6.2.2 The number of persons handling samples from the time of sampling to receipt by the laboratory should be held to a minimum.
- 6.2.3 Sample containers shall be labeled by attaching tie-on tags, adhesive labels, or by writing on sample containers with indelible markers. Sample containers shall be labeled with sufficient information that they may be traced to sample collection logs, field sheets, or custody records. Choice of adhesive labels or indelible ink should take into consideration that samples may come into contact with melted ice or condensed moisture during shipment or storage.

“Sample Chain of Custody”

6.2.4 Individual samples shall be sealed or sample shipping containers shall be sealed with a tamper-proof seal when they will be relinquished by TVA to a common carrier or if the sampling plan requires it. If the samples will remain in the custody of TVA employees from the time of sampling through transport to the laboratory or under lock and key (as in a locked vehicle or storage container) during this time, use of seals is not required. However, even if seals are not required, their use is strongly urged on shipping containers if the sample is to change hands several times in transport.

6.3 Requirements

6.3.1 Apparatus/Equipment

This procedure specifies no additional apparatus or equipment in addition to any sampling plan.

6.3.2 Materials

6.3.2.1 Sample containers specified in the sampling plan shall be utilized.

6.3.2.2 Labels - Samples labels shall have an adhesive which does not readily release when containers become damp.

6.3.2.3 Custody Forms - Sample chain of custody forms shall be used to record custody of samples after sampling from relinquishment by the sampling organization through transport to receipt by the laboratory. The following information shall be supplied on the custody form:

- a. Project identification
- b. Sample collection date
- c. Sample identification
- d. Collection time
- e. Number of containers per sample identification code
- f. Requested analysis
- g. Sampling location
- h. Comments
- i. Signature of sample collector.

In addition the form shall contain an area so that each relinquishment and receipt of samples may be documented.

“Sample Chain of Custody”

Example custody forms are attached as appendices 10.1 and 10.2. Other forms specific to a given project may be developed as long as they contain the minimum information specified above.

Note: If sample collection time and location are already recorded on a field sheet or sampling log, that information need not be repeated on this form provided a copy of the sampling information is transmitted to the laboratory with the custody sheet.

- 6.3.2.4 Tamper-evident seals - These seals shall be individually numbered or otherwise marked so that they could not be removed and replaced without it being detected. Two styles have been useful for samples or sample containers.
 - 6.3.2.4.1 Adhesive seals advertised as meeting forensic science requirements, such as Kapak brand seals.
 - 6.3.2.4.2 Padlock-style plastic seals for hasps.
- 6.3.2.5 Field Logbooks or Field Sheets - Sampling activities may be documented in field logbooks or field sheets designed for that purpose. When these are used, they shall contain:
 - a. Project identification
 - b. Sample collection date
 - c. Sample identification
 - d. Collection time
 - e. Number of containers per sample identification code
 - f. Reference to the sampling procedure
 - g. Sampling location
 - h. Comments
 - i. Signature of sample collector.
- 7.0 PROCEDURE
- 7.1 Field Operations
 - 7.1.1 Prior to sampling, label sample containers with an adhesive label or with indelible marker. (Note: If the sampling conditions require it, labels may be affixed after sampling and cleaning the outside of the container.)

“Sample Chain of Custody”

- 7.1.2 Document sample information in a field log, field sheet, or the custody sheet if the first two are not provided.
- 7.1.3 Seal the sample container with an adhesive seal if the sampling plan requires it.
- 7.1.4 Complete a “Sample Chain of Custody” form.
 - 7.1.4.1 If field logs or field sheets contain collection time and location, these items may be omitted from the form. In that case, draw a diagonal line in that column and attach a copy of the field logs or sheet so that the laboratory may have pertinent sampling information.
 - 7.1.4.2 If a numbered seal is to be used on the shipping container, note that number in the comments section of the custody form.
 - 7.1.4.3 If the shipping container is to be sealed, sign and date the “relinquished” area of the form.
- 7.1.5 Place the original copy of the paperwork in a plastic bag inside the shipping container. Retain one copy for field files. Transmit a third copy by separate courier, mail or fax to the laboratory.
- 7.1.6 Place the samples in a shipping container. As required by the sampling plan, place ice (or commercial substitute) and a temperature test bottle in the container as well. Seal the shipping container if the sampling plan requires it. See also 6.2.4.
- 7.1.7 Deliver the container to be transported to the laboratory.
- 7.2 Laboratory Receipt (Reference also GLP-0016)
 - 7.2.1 Inspect the seals. Open the shipping container. Inspect the sample custody form to ensure that it is correctly completed. Sign as receiver. Compare the shipping container contents to the information on the form.
 - 7.2.2 If the “relinquished” blank is not completed and the person delivering the samples is present, have that person sign the “relinquished by.” Otherwise write “Not completed”, date and initial. If a person signs “relinquished by,” provide that person a copy of the paperwork.

“Sample Chain of Custody”

- 7.2.2 As required by the sampling plan, measure the temperature of any samples or temperature blanks and record that information on the custody sheet.
- 7.2.3 Communicate any errors, broken seals, missing seals, broken samples, differing identification numbers, extra samples, missing samples or misidentification to field personnel. Document all discussions by memorandum or database sample comment file. Document all problems and their resolution by memorandum or database sample comment file. If seals show signs of tampering, bring this to the attention of the group leader or team leader.
- 7.2.4 Refer to GLP-0016 for further sample receipt and log-in instructions.
- 7.2.6 Following logging, store the samples in a locked, refrigerated storage area as required by the sampling plan or project plan.
- 7.3 Laboratory Custody
- 7.3.1 Samples in locked storage areas, being prepared, being processed, or in autosampler trays are considered to be in the custody of the laboratory. When sampling plans require it, laboratory work areas shall be locked when unattended.
- 7.4 Sample Disposal
- 7.4.1 When customers request it, samples shall be returned to them following analysis.
- 7.4.2 Otherwise, dispose of samples after the time period specified in the sampling plan or project plan. If these do not specify a date, samples should be kept no longer than three months after all analyses are complete.
- 7.4.3 If the sampling plan requires it, document sample disposal in the workorder file, or custody records.
- 8.0 SAFETY
- 8.1 Wear rubber gloves and protective eyewear when handling samples unless it is known that the samples are innocuous.
- 8.2 Avoid contact with samples. Be aware of broken containers, corrosives, irritants, biohazards, flammability, pyrophoricity, reactivity, radioactivity

“Sample Chain of Custody”

and toxicity. Inspect labels and shipping information for warnings. When hazards are known, label samples with hazard information if that is not already provided by the customer.

- 8.3 In case of skin contact, wash thoroughly with soap and water.
- 8.4 In case of eye contact, hold the eyes open and wash for at least 15 minutes in an eyewash. Call for help.
- 8.5 Flammable liquids must be refrigerated only in explosion-proof refrigerators to avoid the risk of explosion caused by sparks in the electrical contacts of the compressor.
- 8.6 In handling samples, be aware of spills on outside of containers. Clean the exterior of containers as needed.

9.0 NOTES

None

“Sample Chain of Custody”

10.2 Sample custody form - General

Sample Chain of Custody
 Tennessee Valley Authority
 Environmental Applications CTR-1K Muscle Shoals, AL

Project	Date of Collection				Comments
	Sample ID	Collection Time*	Number of Containers	Analyses Requested	
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

Collector	Date and Time
Relinquishing	
Receiving	

* These columns need not be completed if field sampling sheets containing the same information are attached

END OF PROCEDURE