Los Alamos Environmental Restoration Records Processing Facility

ER Record I.D.# 57970

**LOS ALAMOS NATIONAL LABORATORY**
**ENVIRONMENTAL RESTORATION**
**Records Processing Facility**
**ER Records Index Form**

***ER ID NO.*** 57970 ***Date Received:*** 6/11/98 ***Processor:*** YCA ***Page Count:*** 9

***Privileged: (Y/N)*** N ***Record Category:*** P ***Record Package No:*** 0

***FileFolder:*** N/A

***Correction: (Y/N)*** N ***Corrected No.*** 0 ***Corrected By Number:*** 0

***Administrative Record: (Y/N)*** Y

***Refilmed: (Y/N)*** N ***Old ER ID Number:*** 0 ***New ER ID Number:*** 0

***Miscellaneous Comments:***
N/A

***THIS FORM IS SUBJECT TO CHANGE. CONTACT THE RPF FOR LATEST VERSION. (JUNE 1997)***

3008

(9)

57970

| Los Alamos National Laboratory<br>**Environmental Restoration Program**<br>Standard Operating Procedure | No: LANL-ER-SOP-06.10 Rev: 0 |
|---|---|

# Hand Auger and Thin-Wall Tube Sampler

| | (Print Name) | (Signature) | (Date) |
|---|---|---|---|
| Preparer: | Sandra E. Wagner | Sandra E. Wagner | 10-16-91 |
| Quality Review by: | Philip R. Fresquez | Philip R. Fresquez | 10-23-91 |
| Technical Review by: | Richard Romero | R Romero | 10/23/91 |
| QPPL Approval: | Karen L Worthen | Karen L Worthen | 3/3/92 |
| PM Approval: | Robert W Vocke | Robert W Vocke | 3-4-92 |

Effective Date: 3-16-92

Received by ER-RPP
JUN 1 1 1998

# HAND AUGER AND THIN-WALL TUBE SAMPLER

## 1.0 PURPOSE

This procedure defines a method of collecting subsurface solid samples with a hand auger and thin-wall tube sampler for use in the Environmental Restoration (ER) program.

## 2.0 SCOPE

### 2.1 Applicability

These procedures are applicable to personnel using this equipment for sampling for the ER program.

### 2.2 Training

The field team leader is responsible for monitoring the proper implementation of this procedure. The field team members should be familiar with the equipment and must document they have read and understand this procedure and the procedures in Section 1.0, General Instructions.

## 3.0 DEFINITIONS

A. Thin-Wall Tube Sampler: A tool used to collect undisturbed soil samples. The sample is loaded into a stainless steel tube by the tube sampler as it is being collected. The tube is the sample container and cannot be reused. They are generally used in conjunction with a bucket auger. They cannot be used in extremely hard soil.

B. Bucket Auger: A hand auger that can be used for digging or sample collection. Most bucket augers consist of the auger bucket, various length shafts, and a "T" grip handle. All the parts are threaded and screwed together.

## 4.0 BACKGROUND AND/OR CAUTIONS

Undisturbed soil samples cannot be collected with a bucket auger. Thin-wall tube samplers cannot be used to dig. A subsurface undisturbed soil sample is collected by digging to six inches above the required sample depth with a bucket auger, then collecting the sample with the tube sampler. A composite or disturbed sample can be collected with the bucket auger.

To save time, a manual or powered post hole digger may be used to dig all but the last foot down to the sample depth. The post hole digger must be decontaminated per SOP-02.07. Gasoline must be handled extremely carefully during sampling events involving volatile organic compounds or fuels that are analytes.

Proper back care must be exercised when pulling a stuck auger out of a hole and turning an auger for long periods of time. Work gloves may be needed to prevent blisters.

## 5.0 EQUIPMENT

Refer to Attachment A for equipment list.

## 6.0 PROCEDURE

A. Coordinate the sampling effort with the Sample Coordination Facility (SCF). The SCF will give guidance regarding sample containers, preservation, and shipment to the SCF.

B. Gather and decontaminate needed supplies and equipment (SOP.02.07, General Equipment Decontamination).

C. To dig with the bucket auger:

1. Assemble the auger with a 2-, 3-, or 4-foot-long shaft. Put 1/2-inch Teflon™ tape on all threads to facilitate disassembly.

2. Press down and turn on the auger, dig down 6 to 12 inches then lift the auger out of the hole and remove the soil from the auger bucket. Experience will show how far one can dig with each auger bucket load and still get the auger out of the hole easily. Repeat until the required depth is reached adding additional shaft sections.

D. To collect a sample with the bucket auger:

1. Dig to 6 inches above the required depth. With a clean auger, dig out enough soil for the sample. Discard any soil you suspect fell down the hole and is not from the required sample depth. Put the sample material in the pan. Continue until the required sample volume is reached, then homogenize the sample and put it into the sample containers (SOP-01.02, Samples, Containers, and Preservation).

2. When collecting a composite sample, keep the pan of soil out of the sun and covered with aluminum foil; collect all the aliquots as quickly as possible; do not decontaminate the auger between aliquots.

3. Whenever a sample is collected for chemical analyses, a custody record must be initiated on the Chain-of-Custody/Request for Analysis form and a Sample Label affixed to the sample container (SOP-01.04, Sample Control and Field Documentation).

4. Whenever a sample is collected, complete a description of the sample using the Borehole Log (Soil) Form. An example of this form and instructions for completing this form are supplied in SOP-06.12, Soil and Rock Borehole Logging and Sampling Methods.

E. To collect undisturbed samples:

1. Dig to the required depth. Assemble the tube holder with the appropriate tube inside and attach the tube holder to the auger shaft. Use Teflon™ tape on the threads. Shove or pound the tube holder into the ground until it is full. When pounding, use a plastic hammer and use caution so as not to damage the equipment. If the sample is to be from the surface, remove any rocks, sticks or leaves, then drive the sampler into the ground.

2. Disassemble the tube holder being careful not to let any soil fall out of the tube. Cover the ends of the sample tube with 2-inch-wide Teflon™ tape then put plastic caps over the tape. Lable the bottom end of the tube with "open this end."

F. Label sample containers and complete documentation (SOP-01.04).

G. Decontaminate equipment (SOP-02.07). Pack samples and ship them to the SCF (SOP-01.03). Return all supplies and equipment to their proper storage location.

H. General Instructions

1. Refill the hole and restore the sampling area according to instructions provided in the site-specific work plan.

2. Make sure all sampling locations are properly staked and the location ID is readily visible on the location stake.

I. Postsampling activities

1. Ensure that all equipment is accounted for, decontaminated and ready for shipment.

2. Prepare the samples for transport to the SCF per SOP-01.03.

## 7.0 REFERENCES

The following procedures are directly associated with this procedure and should be reviewed before field operations:

LANL-ER-SOPs in Section 1.0, General Instructions.
LANL-ER-SOP-02.07, General Equipment Decontamination.
LANL-ER-SOP-06.12, Soil and Rock Borehole Logging and Sampling Methods.

ASTM, 1990. "The 1990 Annual Book of ASTM Standards, Volume 04.08 Soil and rock; Dimension Stone; Geosynthetics, "American Society for Testing and Materials.

DeVera, E. R., B. P. Simmons, R. D. Stephens, and D. L. Storm. 1980. "Samplers and Sampling Procedures for Hazardous Waste Streams." U.S. Environmental Protection Agency report EPA 600/2-80-018, January 1980. U.S. Government Printing Office, Washington, D.C.

## 8.0 RECORDS

A. Completed Chain-of-Custody/Request for Analysis Form

B. Completed Borehole Log (Soil) Form

C. Record all other pertinent information on the Daily Activity Log.

## 9.0 ATTACHMENTS

A. Equipment and Supplies Checklist for Sampling Soil with Hand Augers

B. Equipment and Supplies Checklist for Soil Sampling with Thin-Wall Tube Samplers

C. Three Types of Augers

# EQUIPMENT AND SUPPLIES CHECKLIST FOR SAMPLING SOIL WITH HAND AUGERS

_____ T handle and rod attachments

_____ Auger

_____ Bucket type

_____ Continuous flight

_____ Posthole

_____ Sample container(s)

_____ Decontamination equipment

_____ Sprayer

_____ Distilled water

_____ Scrub brush

_____ Methanol

_____ Disposable laboratory gloves/work gloves

_____ Combustible gas indicator

_____ Portable photoionization detector (PID) or flame ionization detector (FID)

_____ Blue ice or equivalent

_____ Plastic sheet

_____ Any additional supplies listed in associated procedures or health and safety plan, as needed.

_____ Daily Activity Logs

_____ Borehole Log (Soil) Forms

_____ Chain-of-Custody/Request for Analysis Forms

## EQUIPMENT AND SUPPLIES CHECKLIST FOR SAMPLING SOIL WITH HAND AUGERS (CONTINUED)

_____ Sample Collection Logs

_____ Variance Logs

_____ Custody Seals

_____ Unique Sample Stickers

_____ Sample Labels

# EQUIPMENT AND SUPPLIES CHECKLIST FOR SOIL SAMPLING WITH THIN-WALL TUBE SAMPLERS.

_____ Paraffin wax

_____ Duct tape

_____ Stove and pan (to heat wax)

_____ Drill rods

_____ T handle

_____ Auger

_____ Disposable laboratory gloves

_____ Combustible gas indicator

_____ Thin-wall tube sampler

_____ Personal protective equipment as specified in site specific Health & Safety Plan

_____ Daily Activity Logs

_____ Borehole Log (Soil) Forms

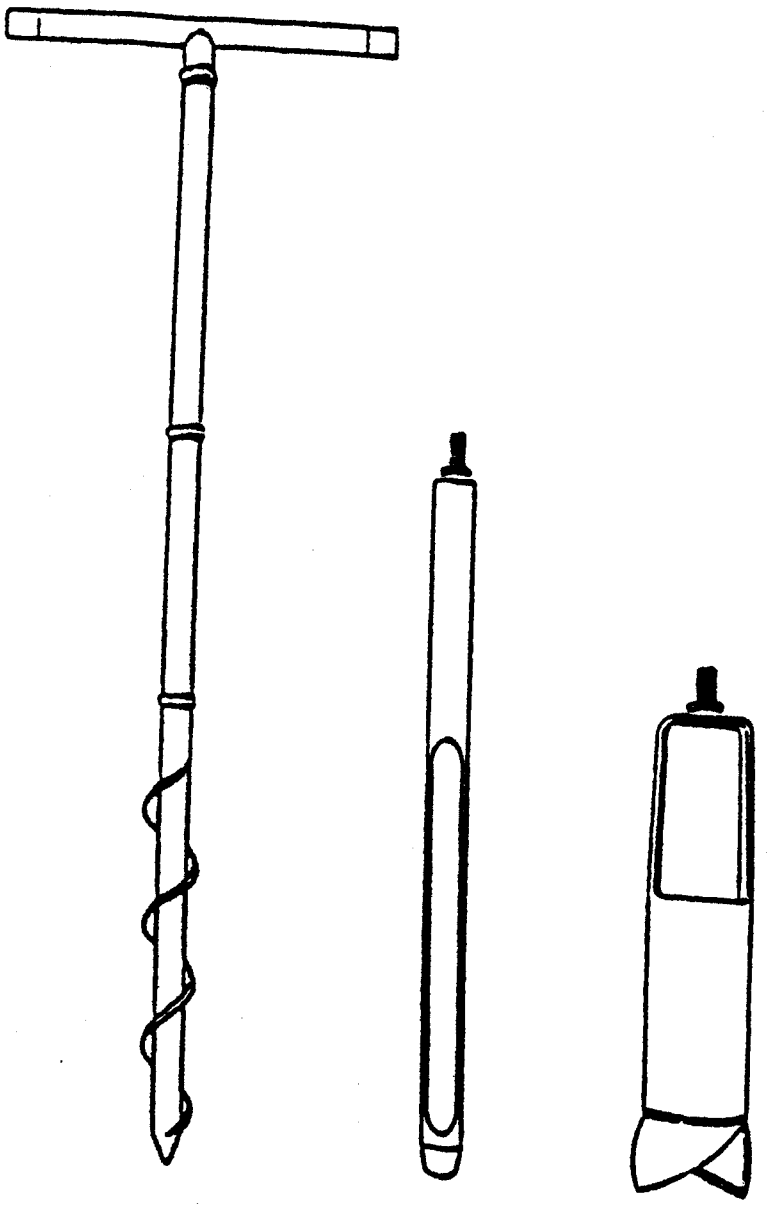
_____ Chain-of-Custody/Request for Analysis Forms

_____ Sample Collection Logs

_____ Variance Logs

_____ Custody Seals

_____ Unique Sample Stickers

_____ Sample Labels

## THREE TYPES OF AUGERS