

ROCKY FLATS PLANT  
EMD OPERATING  
PROCEDURES MANUAL  
VOLUME III: GEOTECHNICAL

Manual No.: 5-21000-OPS-GT  
Procedure No.: Table of Contents, Rev 53  
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Effective Date: 02/28/94  
Organization: Environmental Management

THIS IS ONE VOLUME OF A SIX VOLUME SET  
WHICH INCLUDES:

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VOLUME III: GEOTECHNICAL (GT)  
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**EG&G  
SUPERSEDED  
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CLASSIFICATION REVIEW WAIVER  
D. HOFFMAN, CLASSIFICATION OFFICE  
JUNE 11, 1991

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A-SW-001363

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GT.24	Approval Process for Construction Activities on or Near Individual Hazardous Substance Sites (IHSSs)	0	05/12/92

**DOCUMENT MODIFICATION REQUEST (DMR)**

Refer to 1-A01-PPG-001 for Processing Instructions.  
 Printer Type All Information (Except Signatures).

1. Date <b>02-04-94</b>	25. <b>DMR No. 94-DMR-000276</b>
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2. Existing Document Number/Revision <b>5-21000-OPS-GT.07, Rev. 2</b>	3. New Document Number or Document Number if it is to be changed with this Revision <b>N/A</b>
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4. Originator's Name/Phone/Pager/Location <b>P. A. Kiefer, X8698, 080</b>	5. Document Title <b>Logging and Sampling of Test Pits, Trenches, and Construction Excavations</b>
------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------

6. Document Type <input checked="" type="checkbox"/> Procedure <input type="checkbox"/> Other	7. Document Modification Type (Check only one) <input type="checkbox"/> New <input type="checkbox"/> Revision <input checked="" type="checkbox"/> Intent Change <input checked="" type="checkbox"/> Nonintent Change <input type="checkbox"/> Editorial Correction <input type="checkbox"/> Cancellation
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8. Item	9. Page	10. Step	11. Proposed Modifications
1	4	4.2	Add reference as identified on attached.
2	8	5.2.2	Remove form GT.7B, as identified on attached
3	9	5.2.3	Make changes as identified on attached
4	12,13	7.0	Make changes as identified on attached
5		FORM GT.7A (rev.2)	Replace existing GT.7A (rev.2) with attached GT.7A (rev.3).
6,7		FORMS GT.7B and GT.7C	Eliminate forms GT.7B and GT.7C from procedure.

12. Justification (Reason for Modification, EJO #, TP #, etc.)

Replace GT.7A (rev.2) with a revised GT.7A (rev.3) which is a combination of GT.7A (rev.2), GT.20A (rev.2) and FO.14I. Eliminate GT.7B and GT.7C. These forms are not utilized.

DOCUMENT CLASSIFICATION REVIEW WAIVER  
 PER R.B. HOFFMAN, CLASSIFICATION OFFICE  
 JUNE 11, 1991

If modification is for a new procedure or a revision, list concurring disciplines in Block 13, and enter N/A in Blocks 14 and 15. If modification is for any type of change or a cancellation, organizations are listed in Block 13, then Concurrer prints, and signs in Block 14, and dates in Block 15.

13. Organization	14. Print, Sign (if applicable)	15. Date (if applicable)
SME	M. Z. Litaor <i>Michael Litaor</i>	2-4-94
SM	P. A. Kiefer <i>P. A. Kiefer</i>	2-9-94
EQS	RR M.C. Brooks <i>M.C. Brooks</i>	2-21-94

16. Originator's Supervisor (print/sign/date) <b>D. D. Stagg</b> <i>D. D. Stagg</i> <span style="float: right;">2/4/94</span>	
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17. Assigned SME/Phone/Pager/Location <b>M.Z. Litaor/8583/NA/080</b>	18. Cost Center <b>3003</b>	19. Charge Number <b>ENV-GT</b>	20. Requested Completion Date <b>02/25/94</b>	21. Effective Date <b>2/28/94</b>
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22. Accelerated Review? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	23. ORC Review <b>ORC Review Not Required</b>
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24. Responsible Manager (print, sign, date) <b>Bruce Kieferman</b> <i>Bruce Kieferman</i> <span style="float: right;">2-21-94</span>
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**LOGGING AND SAMPLING OF TEST PITS, TRENCHES, AND CONSTRUCTION EXCAVATIONS**

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## 4.0 REFERENCES

### 4.1 SOURCE REFERENCES

The following is a list of references reviewed prior to the writing of this procedure:

A Compendium of Superfund Field Operations Methods. EPA/540/P-87/001. December 1987.

Soil Sample Collection--Surface. Colorado Department of Health Radiation Counting Facility, Operating Procedure. July 1, 1989.

Klute, A., Ed. "Methods of Soil Analysis, Part 1, Agronomy 9". Soil Science Society of America, 1986.

### 4.2 INTERNAL REFERENCES

Related SOPs cross-referenced by this SOP are as follows:

- SOP FO.3, General Equipment Decontamination
- SOP FO.4, Heavy Equipment Decontamination
- SOP FO.13, Containerization, Preserving, Handling, and Shipping of Soil and Water Samples
- ~~SOP FO.14, Field Data Management~~
- SOP GT.1, Logging Alluvial and Bedrock Material
- SOP GT.8, Surface Soil Sampling
- SOP GT.10, Borehole Clearing

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Reference stakes or reference lines between stakes will be used to help measure the pit dimensions and stratigraphy. In small excavations, if the stratigraphy is consistent around the periphery of the pit or on both sides of a trench, a borehole log may be sufficient to document the conditions. However, if relatively complex conditions are exposed, or if the excavation is of a large scale, it is necessary to create a "map" of the exposed surface. This map is to be drawn to scale and will include all of the information required by this SOP. Locations and depths recorded on the map are to be measured from fixed positions which have been surveyed. Depths will be measured by extending a tape measure vertically into the trench or excavation. In cases where the walls of the excavation are not vertical, the depth measurements will need to be corrected to true vertical.

Any visual signs of contamination will also be noted in the map and/or on the log. The map will include a plan view showing the pit orientation with a north arrow and will indicate the side(s) that is mapped.

~~Trench or excavation maps and profiles will be recorded on the Profile Sketch Form (Form GT.7B) unless a larger format is desired or required to show more detail.~~

For the RFP site-wide SSP, soil profiles in the test pits will be described and logged using Soil Conservation Service (SCS) protocols. These protocols will be implemented by a qualified professional using Appendix GT.7A.

## 5.2.3 Sampling

Prior to sampling, the surface to be sampled (bottom or side) will be peeled with a stainless steel instrument to expose an undisturbed surface. Peeling will remove material possibly cross-contaminated during the excavation process by materials from other depths within the pit. If the trench or pit sides are sampled, peeling will start at the top and proceed downward and then

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sampling will start at the bottom and progress upward. Alternatively, each sample location may be individually peeled immediately prior to obtaining the sample.

After peeling, sampling will be conducted by driving stainless steel thin-walled (Shelby) tubes, or by using a stainless steel spoon or scoop, to remove soils from the pit and then placing them in a container. In general, sample containers will be consistent with those described in SOP FO.13, Containerization, Preserving, Handling, and Shipping of ~~Soil and Water~~ Samples. However, Volatile Organic Analysis (VOA) samples may be obtained in stainless steel drive tubes and then immediately capped with Teflon®-lined plastic caps sealed with electrical tape.

Samples obtained for geotechnical purposes only (i.e., sieve analysis, hydrometer analysis, moisture density, and Atterberg limits) may not need the same rigorous specifications regarding sampling equipment and sample containers. All sample containers will be labeled immediately with the following information:

- Station number ~~Location code~~
- Sample number
- Depth
- Analysis to be performed
- Date
- Company ~~Subcontractor name and address~~

For the RFP site-wide SSP, a rectangular-shaped wooden board will be placed on the ground surface and the lip of the pit above the pit face to be sampled. The depth below the surface for sample intervals will be measured from the base of the board.

For the RFP site-wide SSP, soil samples will be collected for each sampling interval from the bottom of the pit face to the top. Soil material will be collected from each interval by exposing

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PIT SOIL PROFILE DESCRIPTION FORM

PROJECT NAME: \_\_\_\_\_ PROJECT CHARGED: \_\_\_\_\_ SUBCONTRACTOR: \_\_\_\_\_ DATE: \_\_\_\_\_

CLASSIFICATION: \_\_\_\_\_ COORDINATION E: \_\_\_\_\_ N: \_\_\_\_\_ LOCATION CODE: \_\_\_\_\_

ELEVATION: \_\_\_\_\_ ASPECT: \_\_\_\_\_ SLOPE(%): \_\_\_\_\_ SLOPE POSITION: \_\_\_\_\_

PARENT MATERIAL: \_\_\_\_\_

DRAINAGE: \_\_\_\_\_

PIT HORIZON DIMENSIONS & ORIENTATION: \_\_\_\_\_

NOTES: \_\_\_\_\_

Sample Number	QC Code	Horizon	Depth (cm) Start / End	Boundary	Color D or M	Coarse Fragment	Texture	Structure	Consist.	Reaction	Clay Film	Roots/ Pores

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Completed By: \_\_\_\_\_ Date: \_\_\_\_\_  
Print Name Signature

Checked By: \_\_\_\_\_ Date: \_\_\_\_\_  
Print Name Signature