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Environmental Programs Directorate Waste Projects and Services

Standard Operating Procedure

for **WEIGHTED BOTTLE SAMPLER FOR LIQUIDS AND
SLURRIES IN TANKS**

APPROVAL SIGNATURES:

Subject Matter Expert:	Organization	Signature	Date
Derek Faulk	WPS-WS	/s/Derek Faulk	10-31-11
Responsible Line Manager:	Organization	Signature	Date
Gilbert Montoya	WPS-HMLW	/s/Gilbert Montoya	10-31-11

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1.0 PURPOSE AND SCOPE

This Standard Operating Procedure (SOP) describes the process for Weighted Bottle Sampler for Liquids and Slurries in Tanks at the Los Alamos National Laboratory (LANL) Environmental Programs Directorate (ADEP).

This SOP is a mandatory document and shall be implemented by all ADEP participants when using the Weighted Bottle Sampler.

NOTE: Subcontractors performing work under the ADEP quality program shall follow this SOP for Weighted Bottle Sampler for Liquids and Slurries in Tanks or may use their own procedure(s) as long as the substitute meets the requirements prescribed by EP-DIR-QAP-001, *ADEP Quality Assurance Plan* (QAP), and is approved by the EP Quality Assurance Team Leader before the commencement of the designated activities.

2.0 TRAINING

- 2.1 EP personnel using this SOP are trained by reading the procedure, and the training is documented in accordance with EP-DIR-SOP-2011, *Personnel Training and Qualifications*.
- 2.2 The LANL Subcontractor Technical Representative (STR) shall monitor the proper implementation of this procedure and shall ensure that relevant team members have completed all applicable training assignments in accordance with EP-DIR-SOP-2011, *Personnel Training and Qualifications*.

3.0 DEFINITIONS

- 3.1 **Weighted Bottle Sampler**— A weighted bottle that can be used to sample liquids in storage tanks, wells, sumps, and other containers. The sampler remains unopened until it is lowered to the desired sampling depth. The sampler consists of a glass or Teflon bottle, a weight, a bottle stopper, and a line that is used to lower and raise the sampler and open the bottle during sampling. There are a few variations of this sampler, as illustrated in the ASTM Methods D 270 and E 300
- 3.2 **Site-Specific Health and Safety Plan (SSHASP)**—A health and safety plan that is specific to a site or ER-related field activity that has been approved by an ER health and safety representative. This document contains information specific to the project including scope of work, relevant history, descriptions of hazards by activity associated with the project site(s), and techniques for exposure mitigation (e.g., personal protective equipment [PPE]) and hazard mitigation.
- 3.3 **Integrated Work Document (IWD)** - In accordance with LANL Procedure P300, *Integrated Work Management*, and an IWD is a tool to document and communicate:
- hazards and controls that are associated with specific work tasks/steps,
 - hazards and controls that occur because of facility conditions,
 - training requirements,
 - work authorization,
 - identity of the person in charge, and
 - identity of managers.

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4.0 BACKGROUND AND PRECAUTIONS

- 4.1 This SOP shall be used in conjunction with an approved SSHASP and IWD. Also, consult the SSHASP for information on and use of all PPE.
- 4.2 The weighted bottle sampler can be used to sample liquids in storage tanks, wells, sumps, and other containers. The sampler has the advantage that it remains unopened until it is lowered to the desired sampling depth. It cannot be used to collect liquids that are incompatible with the weight and line.
- 4.3 The sampler consists of a glass or Teflon™ bottle, a weight, a bottle stopper, and a line that is used to lower and raise the sampler and open the bottle during sampling. There are a few variations of this sampler, as illustrated in the ASTM Methods D 270 and E 300. The ASTM sampler, using a metallic bottle basket that serves as a weight, is preferred. The weighted bottle sampler can either be fabricated or purchased.
- 4.4 The weighted bottle sampler has the following limitations:
- 4.4.1 The exterior of the weighted bottle sampler may be exposed to hazardous materials and must be handled carefully to avoid unnecessary contamination of the immediate sampling area.
 - 4.4.2 The weighted bottle sampler cannot be used to collect liquids that are incompatible with the bottle, weight, or line.
 - 4.4.3 It is difficult to use with very viscous liquids.

5.0 RESPONSIBLE PERSONNEL

The following personnel are responsible for activities identified in this procedure.

ADEP Personnel
STRs
Team Leader
Waste Management Coordinators
Subcontractor Personnel

6.0 EQUIPMENT AND TOOLS

A checklist of suggested equipment and supplies needed to implement this procedure is provided in Attachment 1.

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7.0 PROCEDURE

NOTE: EP personnel may produce paper copies of this procedure printed from <http://int.lanl.gov/environment/cleanup/ga.shtml>. However, it is each person's responsibility to ensure that they trained to and utilize the current version of this procedure.

- 7.1 Assemble the necessary equipment and appropriate protective clothing in accordance with the SSHASP and IED.
- 7.2 Pack and transport the equipment to the site.
- 7.3 Use new equipment or decontaminate all equipment per the instructions in EP-ERSS-SOP-5061, *Field Decontamination of Equipment*.
- 7.4 Open the waste container or vessel.
- 7.5 Lower the closed weighted bottle sampler into the waste liquid to the desired depth. Record the pertinent information per SOP-5181, *Notebook Documentation for Waste and Environmental Services Technical Field Activities*.
- 7.6 Open the bottle stopper and collect the sample.
- 7.7 Close bottle stopper.
- 7.8 Raise the sampler out of the waste. Place the sample into a sample container (EP-ERSS-SOP-5066, *Sample Containers and Preservation*).
- 7.9 Decontaminate reusable samplers before reuse, or use a new sampler to prevent contamination or cross-contamination.
- 7.10 Repeat steps 7.4 through 7.9 until all samples have been collected.
- 7.11 Close the waste container.
- 7.12 Package all samples for transport to the Sample Management Organization (SMO), (EP-ERSS-SOP-5057, *Handling, Packaging, and Transporting Field Samples*). All sampling efforts must be coordinated with the SMO.

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8.0 REFERENCES

ADEP Project personnel using this procedure should become familiar with the contents of the following documents to properly implement this SOP.

- EP-DIR-QAP-0001, *EP Quality Assurance Plan*
- EP-DIR-SOP-2011, *EP Personnel Training and Qualification*
- P300, *Integrated Work Management*
- P409, *Waste Management Requirements*
- EP-DIR-AP-10003, *Records Management Procedure for ADEP Employees*
- EP-ERSS-SOP-5055, *General Instructions for Field Investigations*
- EP-ERSS-SOP-5056, R0, *Sample Containers and Preservation*
- EP-ERSS-SOP-5057, *Handling, Packaging, and Transporting Field Samples*
- WES-EDA-QP-219, *Sample Control and Field Documentation*
- EP-ERSS-SOP-5061, *Field Decontamination of Equipment*
- SOP-5181, *Notebook Documentation for Waste and Environmental Services Technical Field Activities*
- SOP-5238, *Characterization and Management of Environmental Program Waste*
- EPA, "Test Methods for Evaluating Solid Waste," Vol. II: Field Manual Physical/Chemical Methods, Office of Solid Waste and Emergency Response, Washington D.C., 1986.
- EPA Region IV, "Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual," (Environmental Services Division, Athens, GA, 1991).

9.0 RECORDS

EP personnel are responsible for submitting the following records to the Records Processing Facility in accordance with EP-DIR-AP-10003, *Records Management Procedure for ADEP Employee*:

- Completed and reviewed field notebook.
- Notebook attachments and/or data, applicable
- Sample Collection Logs
- Chain of Custody/Request for Analysis Forms

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10.0 ATTACHMENT

Attachment 1 - Equipment and Supplies Checklist for Weighted Bottle Sampler for Liquids and Slurries in Tanks

11.0 REVISION HISTORY

Revision No.	Effective Date	Description of Changes	Type of Change
0	07/20/01	New procedure	All
1	12/13/01	Updates SOP to new format	All
Reviewed	03/01/2004	Deemed Adequate	All
0	11/04/2011	New document control number assigned; Supersedes SOP-06.19, R1; Updated organizations; Revised and reformatted document.	T/E

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ATTACHMENT 1

EP-DIV-SOP-20015-1

Equipment and Supplies Checklist for Using a Weighted Bottle Sampler for Liquids and Slurries in Tanks



- Weighted Bottle Sampler
- Funnel
- Disposable Wipes
- Sample Containers
- Sample Collection Logs
- Chain of Custody/Request for Analyses Forms
- Chain of Custody Seals
- Any PPE listed or required in the SSHASP
- Sample Container Labels
- Field Notebook

Sample