

Identifier: EP-DIV-SOP-20014
(Supersedes SOP-06.15, R1)

Revision: 0



Effective Date: 11-04-2011

Next Review Date: 11-04-2014

Environmental Programs Directorate Waste Projects and Services

Standard Operating Procedure

for **COLIWASA SAMPLER FOR LIQUIDS AND SLURRIES**

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

Title: Coliwasa Sampler for Liquids and Slurries	No.: EP-DIV-SOP-20014	Page 2 of 8
	Revision: 0	Effective Date: 11-04-11

Table of Contents

1.0 PURPOSE AND SCOPE 3

2.0 TRAINING 3

3.0 DEFINITIONS 3

4.0 BACKGROUND AND PRECAUTIONS 4

5.0 RESPONSIBLE PERSONNEL 4

6.0 EQUIPMENT AND TOOLS..... 4

7.0 PROCEDURE 5

8.0 REFERENCES 6

9.0 RECORDS 6

10.0 ATTACHMENT 6

11.0 REVISION HISTORY.....7

Title: Coliwasa Sampler for Liquids and Slurries	No.: EP-DIV-SOP-20014	Page 3 of 8
	Revision: 0	Effective Date: 11-04-11

1.0 PURPOSE AND SCOPE

This Standard Operating Procedure (SOP) describes the process for Coliwasa sampling of liquids and slurries 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 Composite Liquid Waste Sampler (Coliwasa).

NOTE: Subcontractors performing work under the ADEP quality program shall follow this SOP for Coliwasa Sampler for Liquids and Slurries or may use their own procedure(s) as long as the substitute meets the requirements prescribed by EP-DIR-QAP-0001, *EP 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, *EP Personnel Training and Qualifications*.

2.2 The LANL Subcontractor Technical Representative (STR) shall monitor the proper implementation of this procedure and ensures that relevant team members have completed all applicable training assignments in accordance with EP-DIR-SOP-2011, *EP Personnel Training and Qualifications*.

3.0 DEFINITIONS

Bung— Screw type opening on top of drums.

Bung Wrench— Wrench used to open and close bung on top of drums.

Coliwasa— Composite Liquid Waste Sampler. The Coliwasa is designed to collect liquid. It permits the representative sampling of multiphase liquids with a wide range of viscosity, corrosivity, volatility, and solids.

Site-Specific Health and Safety Plan (SSHASP)—A health and safety plan that is specific to a site or EP-related field activity that has been approved by an EP 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.

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.

Title: Coliwasa Sampler for Liquids and Slurries	No: EP-DIV-SOP-20014	Page 4 of 8
	Revision: 0	Effective Date: 11-04-11

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 Coliwasa is designed to collect liquid. It permits the representative sampling of multiphase wastes with a wide range of viscosity, corrosivity, volatility, and solids. Its simple design makes it easy to use and allows the rapid collection of samples, thus minimizing the exposure of the sample collector to potential hazards from the liquids. The sampler is commercially available, as either a reusable or disposable unit, but is relatively easy and inexpensive to fabricate. The cost of fabrication is low enough that the contaminated parts may be discarded after a single use when they cannot be easily cleaned. The use of disposable units decreases the likelihood of cross-contamination.
- 4.3 The main parts of the Coliwasa consist of the sampling tube, the stop-cock, and the closure system. The sampling tube consists of a 5-foot (1.52-m) by 1 5/8-inch (4.13-cm) inner diameter translucent plastic pipe; usually made of polyvinyl chloride (PVC), PTFE or borosilicate-glass plumbing tube.
- 4.4 Coliwesas are constructed of either plastic or glass. The plastic type consists of a translucent plastic sampling tube. The glass Coliwasa uses borosilicate-glass plumbing pipe as the sampling tube. The plastic Coliwasa is used to sample most containerized liquid wastes except for wastes containing ketones, nitrobenzene, dimethylformamide, mesityl oxide, and tetrahydrofuran.
- NOTE:** The glass Coliwasa is used to sample all other containerized liquids that cannot be sampled with the plastic Coliwasa except strong alkali and hydrofluoric acid solutions.
- 4.5 The Coliwasa sampler has the following limitations:
- Not suitable for sampling in containers over 5 feet (1.5-m) deep.
 - Cannot be used for sampling hydrofluoric acid and concentrated alkali solutions.

5.0 RESPONSIBLE PERSONNEL

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

ADEP Personnel
STR
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.

Title: Coliwasa Sampler for Liquids and Slurries	No: EP-DIV-SOP-20014	Page 5 of 8
	Revision: 0	Effective Date: 11-04-11

7.0 PROCEDURE

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

- 7.1 Assemble the necessary equipment and appropriate protective clothing in accordance with the SSAHSP or IWD.
- 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 For drum and other containerized liquid sampling use the following procedure.
 - 7.4.1 Open only drums where contents are known and are included in the approved SSHASP and IWD.

NOTE: A bulging container indicates pressure and should receive special handling. Stand back and determine the extent to which the container is bulging from its original shape. Call a safety officer and/or the owner of the container so that a best estimate of the container's hazards may be assessed. Opening a pressurized container must be performed according to the requirements of an approved SSHASP and a remote handling device may be required.
 - 7.4.2 Draw the sample from the bung openings whenever possible.
- 7.5 Insert the open Coliwasa into the desired liquid phase to be sampled and obtain the sample.
- 7.6 Close the Coliwasa and remove the sample within the Coliwasa from the container being sampled. Record the pertinent information per SOP-5181, *Notebook Documentation for Waste and Environmental Services Technical Field Activities*.
- 7.7 Transfer the sample from the Coliwasa to the sample container (EP-ERSS-SOP-5056, *Sample Containers and Preservation*).
- 7.8 Decontaminate reusable samplers before reuse, or use a new sampler to prevent contamination or cross-contamination.
- 7.9 Repeat steps 7.4 through 7.8 until all samples have been collected.
- 7.10 For drum and containerized materials, reclose the container.
- 7.11 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.

Title: Coliwasa Sampler for Liquids and Slurries	No: EP-DIV-SOP-20014	Page 6 of 8
	Revision: 0	Effective Date: 11-04-11

8.0 REFERENCES

EP 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*
- WES-EDA-QP-219, *Sample Control and Field Documentation*
- EP-ERSS-SOP-5056, *Sample Containers and Preservation*
- EP-ERSS-SOP-5057, *Handling, Packaging, and Transporting Field Samples*
- 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

9.0 RECORDS

9.1 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 Employees*:

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

10.0 ATTACHMENT

Attachment 1 - Equipment and Supplies Checklist for Coliwasa Sampler for Liquids and Slurries

Title: Coliwasa Sampler for Liquids and Slurries	No: EP-DIV-SOP-20014	Page 7 of 8
	Revision: 0	Effective Date: 11-04-11

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	Eliminates Attachments of example coliwasa, containerized waste sampling record, and data form completion.	Attachments
Reviewed	03/01/2004	Deemed Adequate	All
0	11/04/11	New document control number assigned; Supersedes SOP-06.15, R1; Updated organizations; Revised and reformatted document.	T/E

[Click here for "Required Read" credit.](#)

ATTACHMENT 1

EP-DIV-SOP-20014-1

Equipment and Supplies Checklist for Using a Coliwasa Sampler for Liquids and Slurries



- Coliwasa
- Bung Wrench
- 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