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Standard Practice for Sampling With a Composite Liquid Waste Sampler (COLIWASA)¹

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1. Scope

1.1 This practice describes the procedure for sampling liquids with the composite liquid waste sampler, or “COLIWASA.” The COLIWASA is an appropriate device for obtaining a representative sample from stratified or unstratified liquids. Its most common use is for sampling containerized liquids, such as tanks, barrels, and drums. It may also be used for pools and other open bodies of stagnant liquid.

NOTE 1—A limitation of the COLIWASA is that the stopper mechanism may not allow collection of approximately the bottom inch of material, depending on construction of the stopper.

1.2 The COLIWASA should not be used to sample flowing or moving liquids.

1.3 *This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*²

- D4687 Guide for General Planning of Waste Sampling
- D5088 Practice for Decontamination of Field Equipment Used at Waste Sites
- D5283 Practice for Generation of Environmental Data Related to Waste Management Activities: Quality Assurance and Quality Control Planning and Implementation
- D5743 Practice for Sampling Single or Multilayered Liquids, With or Without Solids, in Drums or Similar Containers
- D6232 Guide for Selection of Sampling Equipment for Waste and Contaminated Media Data Collection Activities

¹ This practice is under the jurisdiction of ASTM Committee D34 on Waste Management and is the direct responsibility of Subcommittee D34.01.03 on Sampling Equipment.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard’s Document Summary page on the ASTM website.

3. Summary of Practice

3.1 A clean device is slowly lowered into the liquid to be sampled. After it has filled, the bottom of the sampling tube is closed and the device is retrieved. The contents are subsequently discharged into a sample container.

4. Significance and Use

4.1 This practice is applicable to sampling liquid wastes and other stratified liquids. The COLIWASA is used to obtain a vertical column of liquid representing an accurate cross-section of the sampled material. To obtain a representative sample of stratified liquids, the COLIWASA should be open at both ends so that material flows through it as it is slowly lowered to the desired sampling depth. The COLIWASA must not be lowered with the stopper in place. Opening the stopper after the tube is submerged will cause material to flow in from the bottom layer only, resulting in gross over-representation of that layer.

4.2 This practice is to be used by personnel acquiring samples.

4.3 This practice should be used in conjunction with Guide D4687 which covers sampling plans, safety, QA, preservation, decontamination, labeling and chain-of-custody procedures; Practice D5088 which covers decontamination of field equipment used at waste sites; Practice D5283 which covers project specifications and practices for environmental field operations, and Practice D5743 which covers drum sampling..

5. Sampling Equipment

5.1 COLIWASAs are available commercially with different types of stoppers and locking mechanisms, but they all operate using the same principle. They can also be constructed from materials such as polyvinylchloride (PVC), glass, metal, or polytetrafluoroethylene (PTFE). A traditional model of the COLIWASA is shown in Fig. 1 [de Vera et al.]^{3, 4}; however, the design can be modified or adapted, or both, to meet the needs

³ de Vera, E. R., Simmons, B. P., Stephens, R. C., and Storm, D. L., “Samplers and Sampling Procedures for Hazardous Waste Streams,” EPA-600/2-80-018, January 1980.

⁴ Ford, P. J., Turina, P. J., and Seeley, D. E., “Characterization of Hazardous Waste Sites—A Methods Manual: Volume II,” Available Sampling Methods, Second Edition, EPA-600/4-84-076, December 1984.