Designation: D 4346 – 84 (Reapproved 2003)

Standard Practice for Collecting Benthic Macroinvertebrates with Okean 50 Grab Sampler[1]

This standard is issued under the fixed designation D 4346; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice covers the procedures for obtaining qualitative or quantitative bottom samples of macroinvertebrates inhabiting sand, gravel, mud, clay, and similar substrates.

1.2 This device is used primarily in estuarine and marine waters, and large rivers.

1.3 For the advantages and limitations of grab sampling devices, see Guide D 4387.

1.4 *This standard does not purport to address all of the safety concerns, 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.* For specific hazards, see Section 5.

2. Referenced Documents

2.1 *ASTM Standards:*

D 4387 Guide for Selecting Grab Sampling Devices for Collecting Benthic Macroinvertebrates[2]

3. Summary of Practice

3.1 The Okean 50 grab sampler has paired jaws that must penetrate the intended substrate without disturbing the water surface boundary of the substrate, close when positioned properly on the bottom, and retain discrete samples of sediment while it is brought to the surface for processing.

3.2 This device is modified from the Petersen grab by the addition of a counter weight to release the twin jaws and the installation of opening lids in the top of the jaws so that water can flow through as the device is being lowered.

3.3 The Okean 50 grab sampler retains many of the disadvantages of the Petersen grab but is better for sampling in deep water.

4. Significance and Use

4.1 The Okean 50 grab sampler is used to collect qualitative and quantitative samples from different aquatic habitats containing benthic macroinvertebrates living on or in various types of substrates.

4.2 The organisms in the sample are used to define macroinvertebrate community characteristics in water quality studies and ecological assessments.

5. Hazards

5.1 The top of the sampler also contains hinged doors that are held open so that water can flow through as the unit is being lowered and closes when the grab reaches the bottom.

5.2 The sampler has a counter weight release mechanism to prevent tripping in mid-water.

5.3 The sampler can be weighted up to 150 kg to improve penetration into the substrate.

6. Procedures

6.1 Slowly and carefully lower the sampler, otherwise, disturbance of the sediment will occur.

6.2 The sampler is heavy and requires a boat with a powered winch and cable.

6.3 Raise the sampler at a slow but steady rate to prevent sample loss or washout.

6.4 Once the sample is on board, empty it into either a suitable container or a sieving device directly for processing.

6.5 Wash or hose the sampler with water so that all the sample is removed from the device for processing before a replicate sample is taken.

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[1] This practice is under the jurisdiction of ASTM Committee E47 on Biological Effects and Environmental Fate and is the direct responsibility of Subcommittee E47.03 on Sediment Assessment and Toxicology.

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[2] *Annual Book of ASTM Standards*, Vol 11.05.

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