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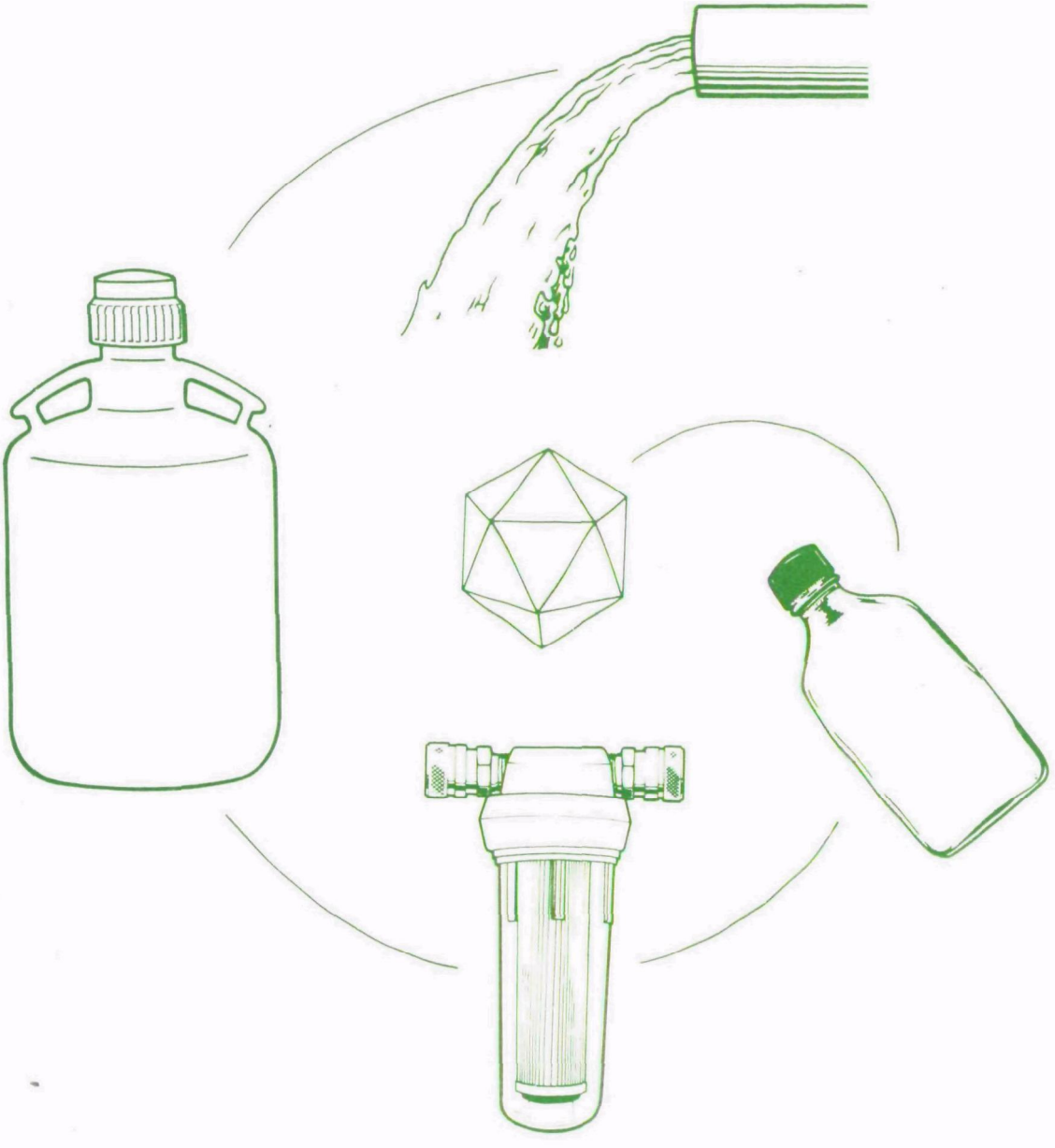
USEPA Manual of Methods for Virology



Foreword

Environmental measurements are required to determine the quality of ambient water, the character of effluents, and the effects of pollutants on aquatic life. The Environmental Monitoring Systems Laboratory-Cincinnati conducts research to develop, evaluate, standardize and promulgate methods to:

- Measure the presence and concentration of physical and chemical pollutants in water, wastewater, bottom sediments, and solid waste.
- Concentrate, recover, and identify enteric viruses, bacteria, and other microorganisms in water, waste, soil and air.
- Determine the health and ecological effects of viruses, bacteria and parasites in the environment.
- Measure the effects of pollution on freshwater, estuarine, and marine organisms, including the phytoplankton, zooplankton, periphyton, macrophyton, macroinvertebrates, and fish.
- Automate the measurement of the physical, chemical, and biological quality of water.
- Conduct an Agencywide quality assurance program to assure standardization and quality control of systems for monitoring water and wastewater.

This manual was prepared and updated in order to meet mandates of the Congress of the United States of America as directed in the Water Quality Act of 1987 (PL 100-4), the Safe Drinking Water Act (PL 93-523) as amended by the Safe Drinking Water Act Amendments of 1986 (PL 99-339), the Marine Protection, Research, and Sanctuaries Act (PL 92-532), and the Resource Conservation and Recovery Act (PL 94-580). The manual presents a standardized, step-by-step procedure for recovering viruses from most environmental samples other than air.

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Purpose

This manual provides procedures for collecting scientifically valid and legally defensible information on human enteric viruses in water, wastewater and treated effluents and in sludge, sediments and other solids as related to water quality problems, pollution sources and control requirements. It focuses on practical and economical virus monitoring technology and makes it possible for any competent water bacteriology laboratory that can arrange for viral assays (and identifications) to evaluate and quantify enteric viruses in environmental samples.

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