

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
GUIDANCE FROM HOTLINE COMPENDIUM

WSG H53

Date Issued: December 1999

SUBJECT: Point-of-Entry (POE) Devices to Comply with the Total Coliform Rule, Surface Water Treatment Rule (SWTR) and Interim Enhanced Surface Water Treatment Rule (IESWTR)

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The Total Coliform Rule, SWTR, and IESWTR apply to public water systems; i.e., systems serving at least 15 service connections or 25 people per day. Individual households may use POE devices at their own discretion and have no requirements to meet the Safe Drinking Water Act. Though generally not recommended, POE devices may in some circumstances be used in lieu of centralized treatment to comply with the Total Coliform Rule, SWTR, or IESWTR, or as a condition for obtaining an exemption. Exemptions are time delays for meeting the criteria of a National Primary Drinking Water Regulation (NPDWR). Exemptions may be granted by the State depending upon the circumstances of a system. Exemptions for systems with 500 or fewer service connections can be renewed indefinitely if applicable criteria are met.

Section 141.100, Subpart J of the NPDWR (enclosed) specifies conditions which must be met for POE devices to be used to comply with a Maximum Contaminant Level (MCL) such as the Total Coliform Rule. Though not stated in Section 141.100, these conditions are also appropriate for determining if POE devices may be used for complying with a treatment technique requirement such as the SWTR and IESWTR. In addition, the SWTR and IESWTR require that alternative filtration technologies such as POE devices, in accordance with Section 1412 (b)(4)(E), must be “owned, controlled, and maintained” by the PWS and cannot use POU devices for microbial control. These devices must also be demonstrated to the satisfaction of the State that, in combination with disinfection, they are capable of achieving at least 99.9 and 99.99 percent removal and/or inactivation of Giardia cysts and viruses, respectively. Also, for systems serving more than 10,000 people, the IESWTR requires that POE devices achieve 99.0 percent removal of Cryptosporidium cysts. The characteristics of the POE device and the maintenance program will determine the amount of monitoring which is appropriate to ensure that adequate treatment is being provided on an ongoing basis.

The SWTR and IESWTR allow for continuous turbidity monitoring with periodic validation in lieu of grab sample monitoring. If continuous monitoring is used, measurements are to be read from a recorder at four-hour intervals to determine compliance. For alternative filtration technologies (which would include POE devices), the SWTR allows the State to reduce turbidity monitoring to one representative sample of the filtered water per day, depending upon the characteristics of the technology. If the performance of one POE device cannot be relied on to reflect the performance of the other POE devices, at least one sample per day from each device should be required. In some cases it may be possible, depending upon the design of the POE device and the maintenance program in place, that representative monitoring can be achieved with one sample from a different POE device

each day.

Regarding disinfection with ultraviolet light, the SWTR and IESWTR do not allow for this technology to be used alone for providing disinfection. Ultraviolet light is not known to be effective for inactivating Giardia cysts and it does not provide a disinfectant residual. However, ultraviolet light is effective for inactivating viruses in non-turbid waters. It appears that a POE device which removes at least 99.9 percent of Giardia cysts followed by disinfection with ultraviolet light, which achieves with filtration at least 99.99 percent removal and inactivation of viruses, could be an effective means of providing adequate treatment for individual households. EPA is considering use of ultraviolet light in the forthcoming disinfection requirements for ground water systems that EPA plans to propose in early 2000. Additionally, recent data indicate that ultraviolet light may be effective against Cryptosporidium.