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Clarification Regarding the Acceptable Location of a Pump or Dosing Siphon

The Water Quality Control Division (Division) has received inquiries regarding the acceptable location of a dosing siphon when used as an integral component of an OWTS. The following is provided as a clarification of the requirements of Regulation 43.

Section 43.9(H)(3)(a) of Regulation 43 states in part: *“A pump may be, or a siphon shall be, installed in a separate tank following the septic tank ... The use of a three-compartment septic tank, sized to provide effective volume in the first two compartments with the pump in the third compartment, is acceptable.”*

However, section 43.9(I)(2) of Regulation 43 states in part: *“If a pump or dosing siphon is used to remove septic tank effluent from the final compartment of the septic tank, an effluent screen must be provided prior to the pump or siphon inlet...”*

Note that section 43.9(H)(3)(a) states: *“a siphon shall be installed in a separate tank following the septic tank”* while section 43.9(I)(2) states: *“if a pump or dosing siphon is used to remove septic tank effluent from the final compartment of a septic tank...”* These two items seem to be in conflict.

A pump system typically incorporates floats to define the required dose volume, while a dosing siphon controls the dose by the size of the bell and the surface area of the tank. Thus, both systems have capabilities to control the dose volume and ultimately provide essentially the same function, intermittently dosing an established volume of effluent to the soil treatment area (STA).

There are two main concerns when proposing to provide dosing from the final compartment of a septic tank: 1) the volume of the initial compartments of the tank must be adequate to provide the detention time required by regulation, which is based on the time needed to settle and float solids, and 2) the design of the tank and additional components must be proper to minimize the amount of suspended solids being discharged to the STA.

A point of clarification needs to be made as to what constitutes a septic tank. A definition is provided in Regulation 43. However, in a multiple compartment tank, the question could be posed as to where the “septic tank” ends and additional components begin. For example, say a three-compartment tank provides a liquid volume of 1000 gallons in the first compartment, 500 gallons in the second compartment and 500 gallons in the third compartment. If the required volume for septic tank detention is 1500 gallons and the crossover between the second and third compartments is accomplished through an effluent screen at the typical outlet elevation of a standard septic tank, would the third compartment (even though it is a monolithic tank) still be considered a part of the “septic tank”? Or, would the “septic tank” be considered to end at the outlet to the second compartment?



The overall intent is to have adequate septic tank volume and a hydraulically separate chamber for the dosing of effluent. Therefore, if the design of the tank complies with the following items, then the placement of a pump, or a siphon, in the third compartment of a monolithic tank would be acceptable:

- The required septic tank storage volume must be provided in the first two compartments.
- The wall between the second and third compartment must be watertight; other than the outlet to the third compartment (see below). Fluctuation in water levels when dosing must only be allowed in the third compartment. The water level of the first and second compartments should remain basically constant.
 - Note that section 43.9(B)(3) of Regulation 43 provides for field testing to ensure that the tank is structurally sound and watertight. This section may be used by a local public health agency to require testing that ensures that the third compartment itself is watertight.
- The transfer of the effluent from the second to the third compartment must be through an outlet designed and located as per the requirements of section 43.9(B)(4) of Regulation 43.

Note that section 43.9(H)(3)(b) makes a limited exception and allows a “pump” to be placed within the second compartment of a septic tank, as long as the conditions of section 43.9(H)(3)(b) are met. However, there is no condition in which a dosing siphon is allowed within the second compartment of a septic tank.

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