

Solutions

Biological Treatment Units Case Study:

Under the provisions of the Subpart CC rules (40 CFR 264 and 265, Subpart CC), air emission controls are no longer required for waste management units that receive hazardous waste when the organic content of the waste has been reduced by a treatment process that meets conditions specified in the rules, §265.1083(c)(2).

Example: Biological Treatment Unit

The owner/operator has decided to use the treatment process alternative that involves the determination of the organic mass biodegradation rate (MR_{bio}) and the required mass removal rate (**RMR**) in §265.1083(c)(2)(iv). Use of this alternative is not waste stream specific in that it does not require a 95% reduction for every waste stream; the required mass removal is based on the aggregated organic mass of the untreated waste. This alternative however does require VO concentration data at the point of waste origination (**Points 1 through 4**) for the four individual wastes that comprise the aggregate waste stream in order to calculate the required mass removal rate (**RMR**). Under this treatment alternative, if the actual organic mass biodegradation rate (MR_{bio}) is equal to or greater than the required mass removal rate (**RMR**), then downstream units managing this waste stream no longer require control for air emissions under Subpart CC. In addition, bio-units that meet this condition are exempt from the control requirements of the Subpart CC rules; no cover is required for the surface impoundment (i.e., the bio-unit).

Review of the data for this treatment unit shows that the fraction biodegraded for the overall waste stream (F_{bio}) is equal to 0.45 and the total mass entering the unit is 46 ppmw; this results in a MR_{bio} of 21 ppmw ($F_{bio} \times \text{Mass in}$). The required organic mass removal rate (**RMR**) as calculated from the VO concentration at the point of waste origination is equal to 16 ppmw. This meets the criteria established in §265.1083(c)(2)(iv) of the rule; therefore, the waste management units following the bio-unit do not require control. In addition, it is important to note that the bio-treatment unit, a surface impoundment in this case, also does not require controls for air emissions because the exemption criteria in § 265.1086(a)(2) are met.