

TABLE III.B-1.—NUMBER OF MPP FACILITIES

Group	Number of facilities		
	Screener data-base	Detailed questionnaire data-base	National estimate
Non-small Red Meat Slaughter or Slaughter/Render .....	28	23	62
Small Red Meat Slaughter or Slaughter/Render .....	64	7	490
Non-small Red Meat Processor or Processor/Render .....	22	5	83
Small Red Meat Processor or Processor/Render .....	311	43	1873
Non-small Red Meat Slaughter/Processor or Slaughter/Processor/Render .....	27	25	74
Small Red Meat Slaughter/Processor or Slaughter/Processor/Render .....	122	16	1012
Non-small Mixed Meat .....	92	15	270
Small Mixed Meat .....	344	18	1924
Non-small Poultry Slaughter .....	66	22	149
Non-small Poultry Slaughter/Render .....	10	5	21
Non-small Poultry Slaughter/Processor, Processor, or Processor/Render .....	72	35	162
Non-small Poultry Slaughter/Processor/Render .....	10	9	24
Small Poultry Slaughter, Slaughter/Render, Slaughter/Processor, Slaughter/Processor/Render, Processor, or Processor/Render .....	56	6	344
Render Only .....	29	20	132

#### 4. MPP Industry Cost Model

Instead of using the CAPDET model (see Section III.A.3), EPA developed cost equations for treatment units that were derived from a combination of vendor supplied information, data and information provided in the detailed surveys, and the comments on the proposal. Because the detailed survey did not collect information about many of the specific parameters used in the production process and treatment system of individual facilities, EPA has supplemented the facility-specific information with typical specifications or parameters derived from literature, survey results, and industry comments. For example, EPA has assumed that facilities have pipes of typical sizes for their operations. As a consequence of such assumptions, a particular facility might need a somewhat different engineering configuration from what was modeled if it has installed equipment that varies from the typical equipment or specifications used to estimate costs. However, because EPA has applied typical specifications and parameters that are broadly representative of the industry to a range of processes and treatment systems and has contacted facilities, as follow-up, to identify the site specific configuration information to the extent that the facility can furnish it, EPA considers that costs for these detailed survey facilities are reasonably accurate.

Some of the areas that EPA paid particular attention to in revising the estimates of cost, include issues associated with the pretreatment of wastewater prior to reaching the biological wastewater treatment system, such as BOD levels, the generation of sludge, and the type of disinfection.

The type of pretreatment may affect the levels of BOD entering the biological treatment system. Commenters said that pretreatment with anaerobic lagoons is so effective at reducing BOD that if facilities were required to denitrify, a source of carbon would have to be added to the wastewater to ensure that denitrification would take place. Based on industry-supplied data and a review of the literature, EPA has estimated that an influent BOD:TKN ratio of at least 3:1 is preferable for effective denitrification. EPA has thus included costs for facilities to bypass some of the wastewater around the anaerobic lagoons to supplement BOD if data indicate that the concentration of BOD leaving the anaerobic lagoon is not at least three times the concentration of TKN. Anaerobic lagoon bypass was observed at one facility EPA sampled. Because flows may be too low for effective bypass during periods of no or low operations (e.g., weekends) at some facilities, EPA costed those facilities for the purchase and operation of a system to use methanol as a carbon source for denitrification. To ensure facilities can meet the low nitrogen concentrations in Option 4, EPA also costed for methanol use in the second anoxic tank during regular activity (e.g., weekdays) if BOD supplementation is needed.

In conjunction with the higher BOD concentrations in the biological wastewater treatment system, EPA has also accounted for increased sludge generation and estimated costs for additional sludge dewatering and hauling. EPA has estimated the cost to upgrade the biological wastewater treatment to accomplish nutrient removals for a variety of different baseline treatment configurations,

including activated sludge systems, sequencing batch reactors (SBR), oxidation ditch systems, Schreiber reactors, and Biolac systems. For each different type of biological system, EPA identified the equipment and construction that would be necessary to achieve the long-term average concentrations (*i.e.*, target effluent concentrations) considered for each option. Upgrades could include additional reaction tanks, chemical addition requiring a mixing tank and chemical storage area, piping to provide a waste stream bypass of the anaerobic lagoon, and increased sludge handling capacity.

EPA also notes that for the proposal EPA estimated compliance costs for disinfection based on ultraviolet (UV) technology because of possible concerns with the discharge of disinfection byproducts from the treatment system. However, for today's notice, EPA is instead assuming that chlorination will be the primary means of achieving fecal coliforms limits and is thus not including disinfection costs for facilities that have any type of disinfection technology in place, and is costing chlorination for the facilities that do not. EPA is also not including costs for dechlorination technology because EPA expects that facilities with water quality based limits for chlorine and/or chlorinated by-products already have dechlorination in place and that additional limits for chlorine and/or chlorinated by-products will be rare. There are no national technology based limits for these parameters (and EPA is not proposing any). EPA solicits comment on costing for disinfection using chlorination only (without dechlorination), and information on